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ANNUAL MEETING OF THE BRITISH INSTITUTE OF PHILOSOPHY

AT the tenth General Meeting of the Institute held at University Hall, 14 Gordon Square, London, W.C. 1, on Monday, June 17th, the following Addresses were given by the President, Sir Herbert Samuel, and Professor H. F. Hallett.

ADDRESS BY SIR HERBERT SAMUEL

In the choice of a subject on which to address you to-day I have taken a suggestion from the title of a recent book by Professor Schiller, *Must Philosophers Disagree?* The conclusion of the paper which gives its title to that book is that apparently they must disagree. And the reason which Professor Schiller gives is that philosophers think and write according to their own individual characters; since those characters differ, so must their philosophies. He says: "Actually every philosophy was the offspring, the legitimate offspring, of an idiosyncrasy, and the history and psychology of its author had far more to do with its development than *der Gang der Sache selbst.*"

Since reading that book, I have come across several other observations of the same kind from other writers. There is, for example, the saying, often quoted, by Bradley: "Metaphysics is the finding of bad reasons for what we believe upon instinct, but to find these reasons is no less an instinct."

In Nietzsche's *Beyond Good and Evil*, he says: "The greater part of the conscious thinking of a philosopher is secretly influenced by his instincts, and forced into definite channels." And again: "It has gradually become clear to me what every great philosophy up till now has consisted of—namely, the confession of its originator, and

a species of involuntary and unconscious autobiography." I find the same idea expressed by Mr. Joad in his recent book, *Return to Philosophy*: "While the facts are the same for all, the conclusions which we base upon them will be different. Nor need this difference be deplored; just as it takes all sorts of men to make a world, so does it take all sorts of minds to make the truth about the world, and philosophy is no more to be dismissed because each philosopher has a different system than morality is to be invalidated by the fact of differing moral judgments, or religion proclaimed to be nonsense because there are innumerable variations of religious belief." Many other similar statements have been made. Who was it who said, "Behind every philosopher there lurks a man"?

Now if these views are put forward in a semi-humorous spirit, consciously offering a paradox, less in order to convince than to interest and amuse—well and good. No doubt that is the spirit in which Bradley, at all events, wrote what he did. But if it is seriously meant, then here is a matter which clearly demands examination; and particularly perhaps by the members of this Institute. For this view, if it were to be generally accepted, would, I suggest, undermine the very basis of philosophic thinking, deprive it of the greater part of its value, destroy the greater part of such attraction as it may have for ordinary men. It would treat philosophy as being more akin to poetry than to logic, to art than to science. Each contribution to philosophy would be merely a matter of idiosyncrasy, temperament, intuition, on the part of the philosopher.

It is quite true that it must depend upon a man's personality to what matters he gives his attention, whether he is interested in philosophy at all, and if so, in what branch of it. This is true, indeed, of science also. As Max Planck says: "In actual practice individual physicists are influenced in their investigations by their personal preference for metaphysical, or for positivist, ideas." And recently Schrödinger, the eminent physicist, has written a book with the title, *Science and the Human Temperament,* in which this idea is further developed. He points out how the human element must come in with respect to the choice of the investigations which any scientist may undertake, and of the experiments and observations which he shall make. It is obvious that there is scope for original genius in the exact sciences as elsewhere, both in the management of each inquiry and in finding the clues to its results. And of course all human thought, being human, must be subject to its limitations, and may or may not accord with truth and reality. Nevertheless, the exact sciences are objective rather than subjective, in that when an observation or an experiment has led to a particular result at the hands of one scientist, any other scientist anywhere can repeat the same procedure and will arrive at the same result. Are the

processes of philosophy wholly different from this, and to be regarded as entirely, or even mainly, subjective? I suggest to you that they are not. If one philosopher, proceeding from certain premisses, reaches by a train of reasoning certain conclusions, and if his methods are sound, the same reasoning ought to appeal to every sane man everywhere, regardless of his individual temperament. That is so in logic, and it ought to be so in philosophy.

This is not a matter of abstract, academic discussion. It is of immediate practical importance. In the present day the world is passing through a phase of disillusionment. There is widespread an intellectual cynicism, a spirit of moral defeatism. Anything which tends to undermine faith in the foundations of thought increases these tendencies. In physics the promulgation of the so-called Principle of Indeterminism by Heisenberg, Bohr, Eddington, and others, contributes in that direction. It is satisfactory to know that many of the leading figures in the world of physical science, particularly Einstein, Planck, and Rutherford, are not Indeterminists. If a belief in the Principle of Causality and in the Uniformity of Nature had to be abandoned, the effect could not fail to be injurious throughout the whole sphere of thought. So also, if philosophy came to be regarded, not as a strenuous effort of clear thinkers to arrive at truths capable of universal acceptance, but merely as the spontaneous attempts of a number of individuals to express their own personal beliefs, which themselves were the result merely of temperament or intuition, that, too, would be an ill service to the world.

At these Annual Meetings, and on other occasions when I have had the honour of addressing the Institute, the chief burden of my song has been that philosophy, if it is to be positive and constructive, must base itself upon science. It should not indeed take its direction from science: that is its own affair. But from science it must draw at least the greater part of its materials. This is the view, in fact, so powerfully advocated by our colleague, Professor Alexander, and by Professor Whitehead, among others of our contemporaries. Philosophy is not a form of poetry. It is a matter of precise and universal reasoning. I believe that the members of this Institute, if they are animated by that conception, will best serve the cause which it is designed to promote.

ADDRESS BY PROFESSOR H. F. HALLETT

In a recent article in one of the weekly political journals Lord Russell commented upon the perennial division among philosophers between those who would concern themselves with public affairs and those who preferred to retire to a mountain-top to meditate; and I suppose that Plato is the supreme example of the attempt to

combine the two functions, and taste the sweets of the contemplative life, and also the pains and disappointments, ignominy and zest of social and political activity. But even the synoptic majesty of Plato was not a little distressed, tossed, and sickened by the adventure, so that one feels that he too at times suspected that "useless, star-gazing babbler" was not an altogether unjust assemblage of epithets for a man pretending to be a god, and that the philosophic city was permanently beyond all hope of human attainment. I wonder what Plato really thought at the end of his long life!

And you too, sir, have recently tried to stir the philosophic dry bones of the desert of epistemological wrangling with a plea that philosophers should give direction in these difficult times to a troubled world; should deal with those larger issues that lie beyond the domain of natural science; and provide (if I understood you rightly) if not the captains of the ships of state, at least the rudiments of a nautical almanac, a compass steadily pointing along the route in which we would lie, and a chart giving some of the ports of call, if not the final destination of the human race. About the fact there cannot be any doubt. The divorce between philosophy and life, between those who pursue endless inquiries into what you style "fictional abstractions", into universal values and the nature of the Ultimate Real, and those who drift, mainly unconsciously and partly under the domination of monstrous myths, down the grooves of human evolution, is almost complete. Philosophers cannot get to grips with the detail-problems of practical life, their smooth broad principles will not articulate with the cog-wheels of practice; and the practical men, guided only by catchwords and clichés, superstitions and taboos, dogmas and anthropomorphisms, drift aimlessly on the unknown sea, delighted by chance events that seem favourable to their latest purposes, and amazed by the disasters that overtake them from time to time—largely as a result of the folly of simple, inoffensive individuals and classes.

Now the question to which I propose to direct your attention in the few minutes allotted to me is: What is the source of this age-long division and isolation? For I think that we have not advanced one step beyond the position so graphically portrayed in the *Republic* of Plato: the philosophers still pursue their speculations, honestly or sophistically, or both; and the practical men succeed in getting all sorts of things done, either through sheer insensitivity or by keeping opposing principles in watertight compartments, or by failing to bring past experience to bear on the present; by making use of irrelevant desires and fears and impulses (and more is done in the world through fear of one sort or another than from all other motives put together); by appeals to non-evident axioms, by taking advantage of the fatigue, ignorance, and fatuity of opponents; by

means of the lingering remnants of institutions, beliefs, and customs of mortified or senescent cultures and civilizations. The philosopher is up amongst the stars; the practical man is damaging his fingers (and other people's toes) with brass tacks. But it is stupidity every time that gets things done!

And what I want to say is that this is no mere recurrent accident of history, but belongs to the very substance of the Real in its relation to human personality. Man's place in nature was a favourite topic half a century and more ago though the subject is a little out of fashion to-day, for the predominant conclusions did little to foster human self-importance. Thus, though it is often remarked in footnotes and appendices, it is too often overlooked in prefaces and the main text that there is something incongruous in the little thinking animal understanding the nature of the Immensity that has produced him and sustains him. Descartes found that man's understanding was limited but his freedom boundless; we are only too prone to believe that human freedom is a fiction but the capacity of the human mind in principle unlimited, so that human knowledge is a real section of knowledge as such. We assume that the human mind *can* know the Real, though we hardly suppose that any particular human mind actually *does* know it. Think for a moment how simple and how serene a world we might enjoy if philosophers were at once in possession of perfect knowledge of the pertinent principles and details, and in complete control of human organization, with a descending hierarchy of officials "prone to philosophy" and a rank and file "patient of philosophy". Heaven would have descended upon earth! And how out of joint things are as a result of the simple principle that knowledge, its instrument, and its object are necessarily congruent; so that the philosopher, being after all but a man, lacks perfect apprehension, his world is pulverized by his partiality, and the perfect poise of complete understanding degraded into temporal process and piecemeal activity. Yet, being a philosopher, he is harassed unflaggingly by his foreshortened vision of the perfection that belongs to wholeness, to the Real that he recognizes as the proper object of all his striving.

Is the case, then, hopeless? Must the divorce of philosophy and life continue unmitigated? If we are looking for detailed practical help with the daily perplexities of social and individual life, I think the answer is Yes. Who would go to a philosopher for advice on the simplest matter of human conduct; how to conduct a friendship; the limits to which pleasures should be pursued or pains avoided; the relations of the sexes; marriage and divorce; the team spirit and conscientious gaucherie? In these regions of definite practice the advice of the philosopher is likely to be as much vitiated by long sight as the advice of our relations and friends is vitiated by

short sight, and the advice of the dogmatists and sophists by no-sight. Philosophers have always been the sport of Thracian handmaids and practical wiseacres. For here Reason is lost among the infinite details, qualifications, and corrections that are at once only details and yet absolutely essential to the main issue. If there are principles that apply, they do so with so many qualifications that it were better to be without them, and to trust to trial and error and the main chance. And the fact is, sir, that brass tacks are best dealt with by ironmongers.

But perhaps, though philosophers are useless in the affairs of daily life, there may be, as Dr. Oakeley has said, "certain problems of modern civilization with which only philosophy can deal." Philosophy, she has told us, is "necessary to the sanity of the world", and she has cited such problems as the future of civilization, the value of human life, the mental activities by which values are discovered, pursued, and enjoyed, the criticism of "objective mind" and of tendencies and qualities commonly taken as self-evident. And it was, perhaps, such broad utility in the enlightenment of society about the wider ends of human life that you desiderated, sir, in your plea that the unconscious and more or less automatic evolution of the human race in the past might give place to consciously directed progress over the whole front of human life. I am very far indeed from denying that philosophy—indeed, any clear thought and resolute purpose—can perform a useful function here; but even so, it is not all plain sailing, for the universe of human life in its natural environment is not the proper object of philosophical contemplation. It is a tissue of contradictions, compromises, and makeshifts. Society itself is a makeshift: an essential multiplicity masquerading as a unity. The principles governing such mock-individuals can hardly be fully rational; and the social and political "ironmonger" is as likely to be right in his compromises and hesitations as the philosopher in his resolute rationality. Plaster demands rags and wires and supports that the marble cannot tolerate; and political and social entities are plaster, and not the pure crystal of unity. I am not sure, therefore, whether I should fully trust the judgment of the philosopher even in these more generalized, if not more refined, regions of practice.

I fear that my conclusions so far will appear to you as exclusively sceptical: let me try to finish on a more constructive note. In the article to which I have already referred, and which appeared in immediate sequence to Sir Herbert Samuel's appeal, Dr. Oakeley spoke of the significance of human existence as consisting in the contact of the individual with the real sources of his being—a conception that she connected with Plato's figure of the Den and the soul's emergence from illusion; and I am sure that she was here

emphasizing one of the main interests and functions of philosophy. For man, however he may concentrate his attention upon the nature of Being or Essence, however he may dwell upon the heights and find satisfaction in the ideal Beauty, if he is in earnest with his life he must meet, and if possible resolve, the problem of his own place in the Real, his capacity for understanding it, and the basis of that capacity. He must unbend from the rigid contemplation of Ultimate Reality to observe his own navel. He must defend himself against himself. Man himself, rooted within himself in a reality that is other than he, must be man's central study, and "Man, know thyself" his final imperative, just because in very truth he is thus himself the essential object of all his knowledge. And for the same reason *the main function of philosophy is its de-anthropomorphicatory function*; for here man's desire for intellectual freedom reaches its climax in the determination to conquer humanity's obsession with the human and approach to a perfect understanding content with its proper object. "I have laboured carefully," says Spinoza, "not to mock, lament, or execrate, but to *understand* human actions", and it is this that we remember when we think of him as the philosopher, and not that other and very human picture of him, hardly restrained from rushing out among the bloody mob, shouting "The last of the barbarians!" For the one is the picture of man playing with thought; the other of thought playing with a man. "To understand"—that is the proper activity of the philosopher, contemplation of events and ideas without loss of self-command, without the grimaces and awkward gestures of the fanatic. And this, I think, is philosophy's chief contribution to practice: the cultivation of objectivity and sanity, the penetration beneath the anthropomorphisms of feeling and crude intuition; but all this *with the decent scepticism proper to Reason seeking to penetrate a world of unreason.* For that is where the Stoic fails: whatever Diogenes the spy may report to us in the figure of Epictetus, there *is* something terrible in death, in slander, in want, though Reason exiled in man may refuse to admit it and speak of sackcloth as better than Tyrian purple and the bare ground than the softest couch. In a world of unreason, a world *constituted* by unreason, reason must give place to a "mitigated scepticism". And so my sceptical doubt returns, for this philosophic calm, this objectivity to the values of feeling, cannot be imparted or taught or even justified save as it is fostered by man's viridical delusion that he can rise above his partiality and become as a god "twisting into garlands the brambles that impede him"; which is, I submit, sir, a better figure than Hegel's owl of Minerva fluttering in the twilight.

FREEDOM IN THE PRESENT-DAY WORLD[1]

PROFESSOR R. F. ALFRED HOERNLÉ

A FEW months ago General Smuts, as Rector of St. Andrews University, addressed a stirring appeal to the youth of the world to dedicate itself to the defence of the threatened cause of Freedom.[2]

As a young man, General Smuts fought in the Anglo-Boer war for the political freedom of the South African Republics. As a member of the British War Cabinet during the Great War, he was prominent among the Allied leaders in what was declared to be a war to "make the world safe for democracy". As a signatory of the Treaty of Versailles, he was the first outstanding statesman who, on the very morrow of the signing, had the courage to confess the inadequacies of that settlement, and to appeal to a war-torn world to lay aside the passions of bitter conflict and return to sanity and co-operation. In the League of Nations, which he, more than anyone else, helped to conceive and bring into being, he has sought to create the machinery for the peaceful co-operation between nations. For more than thirty years, in his own country, he has, as Minister and Prime Minister, as leader of a party in power and of that same party in opposition, practised his faith in democratic institutions. Most recently, subordinating personal ambition and one-sided party interests, he has joined with his old political opponent, General Hertzog, in founding the United Party for the healing of the ancient feud between the two White peoples in South Africa. Nor has it been only as a General and a Statesman that he has achieved fame, but also as a Scientist and Philosopher.

When a man such as he, the greatest living South African, declares Freedom to be in danger, I need make no apology for taking his Rectorial Address as my text and submitting his plea for Freedom to a sympathetic examination.

I

Let me say, at once, that I am in fundamental agreement with General Smuts. I desire to emphasize this at the outset, lest some things which I have to say later are misunderstood as expressing fundamental disagreement.

[1] Presidential Address to the Witwatersrand University Philosophical Society, March 1935.

[2] *Freedom*, by J. C. Smuts. London, Alexander MacLehose & Co.

I am at one with General Smuts in what he calls his "ultimate Credo": "There is nothing in the nature of things which is alien to what is best in us. There is no malign fatalism which makes fools of us in our dark striving towards the good. On the contrary, what is highest in us is deepest in the nature of things, and as virtue is its own reward, so life carries its own sanctions and the guarantee of its own highest fulfilments and perfections. That is my ultimate credo; and it is not founded on hearsay, but on first-hand experience in that cross-section of the world which I have lived through. This is no doubt a slender basis of fact for so large a conclusion. But the final convictions are not inductions from experience but insights into it. I remain at heart an optimist."[1]

Again, I am at one with General Smuts in prizing the liberal and democratic tradition of the nineteenth century. With him, I feel repelled by many of the manifestations of the "new Dictatorship which is but the old Tyranny writ large,"[2] whether these manifestations occur on behalf of a revolution or of a counter-revolution, and whether they be employed by a Capitalist society against Communism, or by Communism against its Capitalist enemies. With General Smuts, I value intellectual freedom even higher than political freedom. With him, I try to work for, and I certainly hope for, the triumph of "creative freedom" in the world—defined as he defines it: "Inner freedom and harmony of soul; social freedom and equality before the law as the fundamental foundation of the State; international freedom in the rule of peace and justice."[3]

However, even if I may assume that in these words General Smuts speaks for all of us, I feel that we have no right to range ourselves under his banner without doing something which he had not the time to do in his Address at St. Andrews, viz. to think out in detail what the ideals mean to which we have committed ourselves in response to his call; what these ideals demand of us when they are applied to the actual texture of our modern world.

After all, only the last ten pages (out of thirty-five) of General Smuts's Address deal with the topic of Freedom which gives to the whole Address its title. Thus, all that General Smuts could do was to create an atmosphere and sound a clarion call to his hearers. We who read his words at leisure and can ponder them, owe it to him, no less than we owe it to ourselves and our civilization, to think them out in all their implications. He points us to the far-off goal of our endeavours: we have to map out the path to it in detail. General Smuts tells us that the anti-democratic spirit so prevalent in the world to-day threatens, not only to replace the individual's participation in government by a new slavery which is made effective through the curtailing of "the freedom of thought, speech,

[1] *Loc. cit.*, p. 21. [2] *Loc. cit.*, p. 30. [3] *Loc. cit.*, p. 35.

action, self-expression," but also to substitute for the old spirit of sturdy independence a propaganda-moulded, servile mass-mentality which, in the end, will kill all creative activity and, thereby, all possibility of progress in the future. "For me," says General Smuts, "the individual is basic to any world-order which is worth while."[1] And in this spirit he stands forth as the apostle of that "sturdy individualism which has inspired progress in the past . . . which has created all our best human values."[2]

II. "Sturdy Individualism"

General Smuts, I feel sure, would be the first to admit that the large and emotion-stirring words which he has used in praise of Freedom are, in fact, very vague and indefinite in meaning, and can be interpreted in different and even mutually contradictory ways.

When he speaks of sturdy individualism, it is reasonable to suppose that he is thinking, e.g., of the Voortrekkers of his own people who, a century ago, set out into unknown lands, there to settle and live their lives according to their own conception of the fitness of things, and who, though they neither knew it nor desired it, proved to be the pioneers of European civilization in Southern Africa and the forerunners of that industrial and economic system which others, following in their wake, superimposed upon their simple farmers' and hunters' existence. In other passages he may be thinking of men whose individualism took the form of braving the opposition of Church and State in the cause of truth, whether religious or scientific, or, again, in the cause of some vision of social justice which bade them fight against entrenched privilege and vested interest. In short, we can all think, each according to his taste, of some noble adventure, some brave challenge to an order outworn, which, when called "sturdy individualism," seems to invest individualism, as such, with the halo of the heroic.

True, General Smuts may fairly claim that he has guarded himself against the charge of having commended individualism indiscriminately, by defining the individualism which he advocates as that which "inspires progress" and has "created all our best human values." But, even these words still leave the door open for contradictory interpretations. What is progress for one, is retrogression and even degeneration for another. What some hail as freedom, others denounce as licence and lack of principle. And some, at any rate, of the best human values have been just those things for the sake of which men have been most ready to persecute and destroy one another.

No doubt, freedom of thought, speech, action are good things.

[1] *Loc. cit.*, p. 26. [2] *Loc. cit.*, p. 27.

But does not their goodness depend, at least to some extent, on *what* is thought, said, done? The thoughts of the ignorant, the words of the fool, the acts of the law-breaker are not, as such, a contribution to civilization and progress. By all means let us make the individual "basic to any world-order which is worth while," but on condition that we may demand of the individual the faithful and effective service of some supra-individual value. By all means let us endow the individual with liberty, but on condition that he is a responsible individual who knows how to use his liberty. If one half of the truth is: Be yourself, surely the other half is: Be something which it is worth while being. If one half of the truth is: Have the courage of your convictions, the other half is: Be sure that your convictions are well grounded. Self-expression is a good slogan, provided that it does not abolish the difference between liberty and licence, just as on the social and political plane the premise that the established order is defective and unjust, does not justify the conclusion that anarchy is the ideal, or that lawlessness is the true remedy for bad law.

There is, in short, a profound truth in the well-known phrase from the English Prayer Book concerning the "service" of God "which is perfect freedom," if I may for my present purpose generalize its principle into the formula: Inner freedom (to use General Smuts's own words) consists in the individual devoting himself to the service of supra-individual values; and only on this condition is he entitled to social freedom and equality before the law. And, even then, we have still to add that the supra-individual values to which individuals may devote their lives, and the ways in which they seek to serve them, may not be compatible with each other, and, leading to conflicts between the individuals concerned, may endanger the stability of the social order which is also a "supra-individual value." Is not the moral that freedom of thought, speech, and action, so far as it depends on the mutual toleration of individuals, is possible only within a framework, and on a basis, of mutual agreement which thereby defines the limits within which, or the directions in which, that freedom is to be used?

III. "Creative Freedom"

A blessed verb, "to create"! Whose heart is not thrilled at the suggestion that it is his destiny as a human being to create and to be free to create? Let us say that to create is to realize, to bring into existence, supra-individual values.

Modern philosophy, never so remote from the general movements of thought as it is often accused of being by those who either do not read, or, reading, do not understand, the writings of modern

thinkers, has long been in the fashion and talked of "creation" and "creative activity." Bergson's *Creative Evolution* was a best-seller before the Great War. And of recent years many different thinkers, elaborating the notion of creativity, have told us that the Universe is dynamic; that it is activity, through and through; not chaotic activity, but ordered activity; not haphazard, but with an inner direction which is "progressive," which moves towards the ever-better, towards perfection. The formulae for this ever-better have varied, but the underlying consensus has been vastly impressive. General Smuts himself, in his *Holism and Evolution*, has proved himself not the least of this band of thinkers. A Universe evolving, a Universe progressing by its own nature and momentum towards the realization of ever higher values; and man, or man's mind, as the spearpoint of this advance—in the language of theologizing philosophers, like James Ward, God, the supreme creator, creating creators—such has been the *Leitmotif*. To create is our destiny, and in creating we have the whole drive of a creative Universe behind us!

But let us descend from heaven to earth. What might it mean for you or me "to create"? If we define "creating" as bringing something into the world, causing something to exist, which was not there before, and which is good or worth while; and, negatively, annihilating, or preventing something evil, the enemy of the good —what sorts of activities might "creating," in this sense, be supposed to cover?

In attempting to answer this question, I am troubled by *embarras de richesse*: my difficulty is not that we create so little, but that we create so much.

We create in begetting and bearing children; in making two blades of grass grow where only one grew before; in manufacturing machines and goods for the satisfaction of our needs. We create in painting pictures and in writing poems, even though they be poor ones. We create in making laws; we create in making scientific inventions and discoveries. General Smuts was a creator no less in helping to shape the League of Nations than in writing *Holism and Evolution*. We create not only on the material, but also on the mental, plane: I should reject any definition of creation which excluded what, e.g., St. Francis made of his life. We create as individuals and we create as peoples and States. If we create armies, we also create Churches and Universities. It seems to me that in an intelligible sense Hitler and Mussolini—the one creating a new Germany, the other a new Italy—are creators, no less than Lenin and Stalin who before our eyes are creating a new Russia as an example of a new order of society which, they claim, we shall all one day be glad to copy. General Smuts himself, if his freedom

were not effectively restricted by public opinion in South Africa, might add yet another line to his creative activities, by attempting the solution of South Africa's great problem of the relations between Whites and Blacks, on the lines of his own principle that "Man's progress through the ages is from a regime of domination to one of understanding, consent, and free co-operation."[1] He will no doubt plead that a political leader cannot run too far ahead of his followers, and that the time is not yet ripe for freedom for the great majority of the inhabitants of South Africa. But, if that be his defence, he should perhaps have drawn the consequences for his own advocacy of freedom in his Rectorial Address. If there must needs remain so wide a gap between the planes on which the Rector of St. Andrews and the South African party leader move, it is South Africa which suffers.

However, I am digressing. Let me, then, return to the problem of creative activities. To create, we had agreed, is to bring into being something which is good. But are the results of all the activities in the tentative list just given, in fact, good? This question at once opens up infinite argument. We all want the good—the best, in fact; but on what it is we disagree widely and passionately. The militarist may rejoice at the creation of new armies in Europe: the pacifist cannot but condemn the same development as evil. On the one side, economists exhort us to produce and produce more. On the other, they warn us of the evil of over-production. And, paradoxically enough, the concept of over-production has no relation to actual human needs. Under our economic system, as we all know, men remain hungry and poor in the midst of plenty, and the man who makes two blades of grass grow, or two mealies, where there was only one, may well be a public enemy. When we add that many of the creative activities, listed above, flourish equally under a democratic and under a dictatorial form of government, and do not require the air of political freedom, we have perhaps said enough to show that the ideal of creative activity is beset with difficulties of its own, and that its relation to the ideal of political freedom is by no means obvious.

IV. "Political Freedom"

What is the relation of political freedom to other forms of freedom? Is democracy the basis and precondition of all other forms of freedom? Can, e.g., intellectual freedom, or academic freedom, flourish only under a democratic form of government? Or is democracy but one manifestation of a general spirit of freedom, which has found many other avenues of expression, some of them

[1] *Loc. cit.*, p. 34.

preceding democracy in time, and none of them necessarily bound up with the maintenance of democratic institutions in the political field?

Some of General Smuts's phrases seem to imply the former, others are compatible with the latter, view.

In actual fact, *all* forms of government in the present-day world practise persecution—the so-called democratic no less than the anti-democratic ones. There is at most only a difference of degree between the treatment which has been meted out to Communists and Socialists ("Reds") in democratic U.S.A. and in Fascist Germany. Fascist Germany is peculiar in persecuting a racial group among its citizens—though, assuredly, South Africa has no right to cast stones at Germany for practising the principle of racial discrimination. But all governments persecute—or, at any rate, claim the right to persecute and invest themselves with legal powers to persecute—convictions hostile to themselves, when held by groups actively making propaganda for such convictions, and thus threatening the established order with "revolution." In some countries, like England, public opinion is more sensitive about restrictions of the freedom of speech than in others. But the difference is only one of degree, and it is not only in war-time that the wings of freedom are liable to be severely clipped.

It is true—and here lies the strength of General Smuts's plea—that democracy *in principle* should be exempt from this criticism. For the essence of democracy lies, not so much in the detail of parliamentary institutions, as in the agreement to reach decisions by discussion and vote of all concerned, on the understanding that the out-voted minority accepts the will of the majority as its own. This is the essence of that "progress" in which for "domination" is substituted "consent" and "co-operation." Democracy avoids civil war and domesticates revolution by "counting heads instead of breaking them." This is to conduct political affairs on the plane of "reason" and "persuasion" instead of on the plane of "brute force" and "compulsion."[1]

But, unfortunately, there are limits to the application of this method in practice. It breaks down when interests are so opposed, and the passions aroused are so fierce, that the minority can be held in obedience only by force, because it will fight rather than accept the result of a vote. Unhappily, modern democracies all too often have to deal with issues which are just of this sort—which escape "persuasion" (even of the Pickwickian kind in which the minority, though unconvinced, agrees to let the majority have its way), because the antagonisms go too deep. Such, e.g., are the "racial" issues here in South Africa: Can Whites contemplate

[1] *Loc, cit.*, p. 34.

being out-voted by a Black majority? Such are the issues of social and economic power between Capitalism and Socialism. Such are, sometimes, "national" issues, as in Ireland.

To put this another way: The democratic method operates on two planes—the plane of discussion and the plane of vote. On the latter plane decisions are made. Decisions are necessary for action: for determining policy, making laws, maintaining or changing established institutions. The ideal, as pictured for us by the classical apologists for democracy, is that decisions shall be taken only after, on the plane of discussion, the "truth" has emerged; after all relevant considerations have been presented and men's minds have been allowed to discern, and agree on, what it is best to do. Here, in leading men to the common perception of truth, is the proper place for free speech and free press. Here lies the superior merit of democracy as the method of reason, persuasion, consent.

But the flaw in the ideal is that the argument is not, in fact, conducted exclusively in the objective, dispassionate spirit of scientific investigation, but that it is an interlocking in debating combat of wills, interests, power-factors which will presently test their relative strengths by the vote. No scientific debate settles truth by a majority vote: parliamentary debates issue in voting, because the point to be decided is, not which line of thought is true, but which is to prevail and to be acted on. Even Mill had to admit that majorities might err.

In a democracy, it is true, the party in power is more tolerant of opposition propaganda than in a dictatorship. But it is a tolerance practised always subject to overriding considerations of power-politics. Much depends on the effective control of the means of propaganda for influencing public opinion—the press, the broadcasting stations, political patronage, etc. More depends on a shrewd judgment concerning the point at which the freedom of thought and speech claimed by the advocates of a certain view, becomes dangerous to the interests whose right to exist is challenged by the view in question. If counter-propaganda does not avail to check the danger, other modes of pressure may be used, and in the end laws may be passed making the advocacy of the dangerous view illegal, and giving the interest threatened the protection of the police and the courts.[1] And so, even in a democracy, the principle that everyone should have the right to speak his mind freely and to seek to convince others to his point of view, is apt to be progressively curtailed.

What, in fact, are the conditions of effective toleration? The question is directly relevant to our topic of the relation of political

[1] Cf., e.g., the Riotous Assemblies Act in South Africa, aimed chiefly against Communist and anti-White propaganda among Natives.

to other forms of freedom. When, e.g. intellectual or academic freedom is claimed, what is meant is that no one, and more particularly no properly trained expert, especially in an academic position, is to be prevented from publishing the conclusions to which he has been led by his studies, by the fear of losing his life or his position and income, or, in general, by any other form of social and economic pressure which forces him to choose between the personal well-being of himself and his dependants at the price of keeping his mouth shut, and personal sacrifice and suffering for the sake of proclaiming aloud the truth as he sees it.

My thesis is that the fields of human thought in which the battle for freedom, in this sense, has been effectively won, are those in which the truth (or, rather, the conflicting "truths") have wholly, or almost wholly, lost their political importance, whereas any "truths" which are dangerous to politically powerful interests are liable to meet with a denial of freedom even in democratically governed countries.

To illustrate this thesis: Religious persecution flourished and religious freedom was denied, so long as religious conformity was regarded as an all-important social bond, and the State, for the sake of social unity and stability, was willing to play executioner for the Church. When the religious unity of Christendom was broken by the Reformation, and the Protestant movement continued to split up into ever-fresh denominations, the State discovered that religious unanimity is unnecessary as a social bond, so long as men of different religious beliefs, or even of no religious belief at all, are willing to be equally loyal citizens and good patriots. The principle of religious toleration has given us the "secular," i.e., religiously neutral or indifferent, State, to which it does not matter whether a citizen is a Roman Catholic or a Protestant, a Christian or a Jew, a Theist or an Atheist, so long as they all pay their taxes and obey conscription in war-time. Citizenship, not Churchmanship, became the politically important bond. Religion became the concern of private groups, and even of purely individual consciences, and was "tolerated" by the State, because happily the Churches continued to teach that obedience to the State is part of obedience to God's will, even when the State calls upon the citizens to bear arms in war. That is why the State can deny freedom to conscientious objectors in war-time with the approval of most Christian consciences.

When religion became politically unimportant, freedom of scientific research could also develop. For, once more, men might safely (from the State's point of view) deny points in the traditional Christian dogma, or develop a non-religious, "materialistic" world-view, so long as they remained good citizens and patriots.

At the present day, in Germany, religion seems to have become once more politically important, because religious divisions threaten, or are suspected by Nazi-leaders to be an obstacle to, the complete unification of the German people on the basis of the new Nazi faith. The correct explanation of this phenomenon, as recent events have shown, is that devotion to Nazi ideals is itself a religion, and a religion in conflict with all forms of Christianity which have not been Nazified or "gleichgeschaltet."

To sum up: modern democracy flourished and satisfied, because, and as long as, the issues on which men were passionately divided, such as rival forms of Christianity, or Religion *v.* Science, were compatible with passionate agreement on common civic loyalties, taking the form of willing acceptance of the established order, and of the distribution of economic and social power in that order. The moment such fundamental agreement breaks down—as it has broken down or is in process of breaking down in many States—because the citizen-body is riven by racial, or nationalistic, or economic-class antagonisms, democracy fails to banish the spectres of revolution and civil war (or, at least, the persecution of one section by another). Democratic institutions then become the instruments of the race, or the national group, or the economic class which is defending its power and vested interest. Democracy, then, employs force and compulsion like a tyranny. It ends by denying the liberties which it had been its pride to guarantee. It may even rationalize its betrayal of liberty by pleading that it is denying liberty for the sake of defending it. No wonder that, in these circumstances, democracy is being replaced by dictatorships which achieve the desired result with more efficiency and less make-believe.

V. "Academic (or Intellectual) Freedom"

At this point a word on academic freedom may not be out of place, especially as there are some distinctions to be insisted on which are sometimes overlooked.

(*a*) There is, first, the exclusion from academic positions of certain men, solely on the ground of their race. Not for a moment would I wish to defend this policy. But, it is relevant to point out that it cannot be fairly treated as an attack on academic freedom, as such. It is an attempt to exclude individuals of a certain race from academic teaching and research, but it is not an attempt to control or restrict what shall be taught or made matter of research. It is a persecution of persons, not of doctrines.

(*b*) We come nearer to an attack on academic freedom when we find men excluded from Universities, and debarred from making an academic career, on the ground of their religious or political

convictions. The desired end is usually achieved by positive means, viz. by requiring candidates to subscribe to the political or religious principles which those in control of the Universities seek to maintain. This is definitely to prescribe orthodoxy, and banish unorthodoxy, within the political or religious field. And the principle is the same, whether it demands, as in modern Italy, adherence to Fascism, or, as in the Oxford of a hundred years ago, subscription to the thirty-nine articles of the Established Church. No doubt, the assumption is that only convinced adherents will apply, and that thus no violence is done to any conscience. Actually, the University suffers by limiting its field of choice among available scholars and experts, and individuals are tempted to be insincere in their declarations, either from fear of losing a position which they already hold, or else from thinking that outward conformity in a matter in which they may be at heart indifferent, is a small price to pay for the chance of devoting their lives to kind of work which they care for above all else. It is certainly pitiful to observe how some German scholars, with the growth of Nazi power, have striven to give their work the colouring of the fashionable Nazi ideology. Still, a good mathematician, e.g., remains a good mathematician, whether he be a convinced Nazi or only pretends to be one. There is, fortunately, a considerable degree of logical independence between most subjects in the academic curriculum and a particular set of religious or political principles, and the requirement of religious or political orthodoxy is, so far, compatible with freedom in the specialist's own field. If his freedom is restricted, it is the freedom of the citizen, not that of the scholar and specialist which suffers.[1] Here, again, I am not arguing that the imposition of religious or political tests is desirable or right in itself. I am merely pointing out that this restriction of freedom to think and to teach is confined to the area of the tests, and even then will not be felt by those whose sincere convictions accord with the tests.

(*c*) But more important than these considerations is the point that, in this complicated world of ours, even freedom cannot be treated as an absolute, unconditional value which ought, on all occasions and under all circumstances, to override all other values. There are defenders of freedom who advocate an individualism so unqualified and unrestrained that, if it were really to be practised, the result would be chaos and anarchy, alike in the realms of knowledge and of conduct. Thus, e.g., I read that the Marquess of Lothian, addressing the annual conference of Educational Associations, and recommending the cultivation of the "scientific spirit and the free mind," declared that "Human progress, the attainment

[1] Except, of course, where the scholar's special field is Political Theory, or, in present-day Germany, *Rassenanthropologie*.

of the immense possibilities which I believe are now within human grasp, the emergence of that new religious attitude to life which is the final solution of the problem, will come only if there are enough people who refuse to submit their minds to external controls, who think for themselves, think actively, think scientifically, think honestly, lovingly, mercifully, about everything which comes within the range of their consciousness, and then act fearlessly in the light of that thinking."

Of course, the qualifying adverbs imply a *standard* of thinking, and I am fully prepared to believe that the Marquess means that standard to be a high one. But I miss all emphasis on the need of *learning* so to think, on the *discipline* which alone makes the competent thinker. Broadly speaking, the individual can learn to think only by being taught to think, and such teaching is a social responsibility and implies, therefore, a working agreement on what the standard of good thinking is. It would be a wholesome reply to the individualism, above illustrated, to say that only those have the right to think "for themselves" who are *fit* to think for themselves; and that relatively few people, even among our modern "educated" multitudes, are fit to think for themselves on the vast majority of the countless subjects which, at some time or another, "come within the range of their consciousness." Even men highly trained to think in some special field, who when they utter their thoughts about their speciality do so with authority, have been found to think very badly in other fields of which they either do not know enough, or where they are biased by prejudice and emotion. Professor H. J. Laski, in a recent article in the *New Republic*, pleaded eloquently for the freedom of the instructed mind to teach what it believes to be the truth. Yes—the *instructed* mind: that little word "instructed" makes all the difference. And instruction, to begin with, implies instructors: indeed, it is precisely Professor Laski's point that the instructed mind shall be free to instruct others, just as it was originally instructed itself. Scientists are made by scientists: the practice of the scientific outlook and method is learned by working with those who are already masters of it. Is this "external control"? Obviously, it is—not, indeed, control in the sense of compulsion to believe under the pressure of fear or other logically irrelevant motives, but the control of those who know, the control of the truth which they convey. Teachers are "external" to the learner in that they are other than he; and the truth is "external" to him so long as he has not yet made it his own.

Certainly, in the end the mind that has been instructed may pass beyond, add to, criticize, reject, even revolutionize, the tradition in which it has been instructed. But it will be fit to do so only because it has first mastered what it criticizes or surpasses.

Even this, however, is not the last word. For it does not follow, though it is often lightly assumed, that even "instructed" minds always agree on the subjects to which they have devoted their thought and study. An instructed theologian and an instructed rationalist will widely diverge in what they severally believe to be the truth about the Christian religion. It may be well for a community to tolerate all these different brands of "truth" in its midst. It may even be worth while for all, or most, to be taught from chairs in the same University, and for the youths attending to be exposed, not to a homogeneous intellectual atmosphere, but to a welter and even a chaos in which each must learn to select for himself and to mould himself.

Certainly this is possible and may be desirable on the plane of pure speculation, where different views, even when they have specific practical applications, are none the less kept deliberately divorced from issuing in action. But when "teaching" becomes the propagation of "truths" demanding to be acted on, when, in fact, the teacher's aim is not merely to convince, but to incite to action —what then? Is it wise, is it compatible with citizen-duty, then *always* to "act fearlessly in the light of one's thinking"?

Clearly, a community can tolerate differences, and even contradictions, on the plane of mere thinking among its members, where it cannot tolerate the translation of all these differing and mutually contradictory convictions into simultaneous actions, for the result might well be the destruction of all social order, and its replacement by disruption and anarchy.

In short, the conditions under which, as we had found above, the democratic method becomes unworkable, are also the conditions under which the practice of academic freedom comes to be curtailed, at any rate on all those subjects and problems which touch the fight for power on the political plane.

VI. Conclusion

If democracy, and with it freedom in all its socially desirable forms, is threatened in the modern world, then, clearly, the moral of the preceding argument is that the preservation of democracy requires the preservation, or re-establishment, of certain fundamental convictions concerning the principles on which the community is to be organized. Without a common basis, there can be no unity and coherence. After all, if the democratic method is the method of reason and persuasion, how can you "reason" with a man who denies your fundamental premises? Or how can you "persuade" another, unless you both start from some common ground?

Paradoxical as it may seem: Freedom can flourish only within

the framework of common convictions; and the society which could tolerate among its members an infinite diversity of convictions and actions on these convictions, has not yet been invented, and is, in fact, unthinkable.

Even freedom to differ, implying an agreement to differ, is possible only, either if two people can avoid having to live a common life, or else, if they are held together by bonds so strong that their differences, though they may strain these bonds, are none the less kept in check by a deeper unity.

Hence, how much freedom may be practically realizable depends on historic circumstances in the lives of peoples. Can we deny that situations may arise in which the fundamental unity has been, or is in danger of being, so completely lost, that its restoration overrides all other considerations? Can we deny that this restoration, where groups are divided against each other by utterly conflicting principles, can be effected, if at all, only by force, not by argument? Must we not admit on behalf of the new tyrannies, however much we may dislike them, that—desperate remedies for desperate situations—they try to re-establish broken unities, and to substitute order for chaos? Such re-establishment, through the victory of one party and its set of principles over the other party and its principles, is a war-phenomenon and must be judged as such. All the new tyrannies have done in these wars, as all people will always do in wars, things in themselves utterly indefensible, and they are doing them still. All of them have used, and are using, force—threatened democracies no less than anti-democratic forms of government—against their unyielding enemies. Whom they cannot persuade at least to keep quiet, him they suppress. But the rising generations are their genuine field. Here an education, deliberately planned to inculcate the required loyalties and convictions, may be expected to mould the minds of future citizens to the desired pattern; and so moulded, they will feel free in that pattern. The strength of these tyrannies is that they give youth something to live for: an adventure in building a better world and mastering adverse circumstances. Whether the faith to be communicated be Fascism or Communism, for those who accept it heart and soul and live and work for it, it does offer a supra-individual value as an object of devotion. The lives of these believers will be to themselves supremely worth living: they will find perfect freedom in that service.

Those lovers of democratic freedom who focus their minds narrowly on contemporary events, to the exclusion of wider historic vistas, may often be tempted to despair. But, a philosopher, at any rate, may learn from the history of human thought that no "truth" is ever completely lost. There is no reason to think that the truth of democracy is lost for good and all, merely because it

is temporarily eclipsed in a sick world. Democratic method can flourish only in a healthy society among sane men, and common fundamental convictions concerning the order of society to be maintained are a necessary condition of social health and sanity. In sick societies of men, maddened by war and the aftermath of war, by defeat and shame, by poverty and unemployment, in a society of men who have nothing to live for, democratic method cannot flourish. And just as little can it flourish among fanatics fighting to set up a new order by revolution and maintaining it by ruthless force until it has taken root. Even Plato admits that there are times when the wise man can do no better than shelter behind a wall until the storm has blown past. Such a storm has overtaken the adherents of democratic method in large areas of the modern world. But their day will come again.

SCIENCE AND THE EXPLANATION OF PHENOMENA.[1]

Professor W. T. STACE

My subject to-day falls within that branch of philosophy which is commonly called the philosophy of science. And it is intended, among other things, to illustrate, by the particular case of science, the suggestion which I made in my first lecture that all subjects, scientific, literary, moral, if you examine their first principles, will lead you back into philosophy.

Perhaps I ought to begin, however, by apologizing for talking about science at all. In these days it is a perilous thing for the lay man to do. There are some philosophers, I believe, who can claim to possess a fairly expert knowledge of some one or other of the sciences. But I, assuredly, am not one of them. But by way of an excuse I would plead that science, after all, is but one of many forms of human intellectual endeavour, and that as such it must have its special place and its special function in the general economy of human culture. My purpose in this lecture is simply to inquire what the special function of science is. And that problem, the problem of the function of science, is not itself, I submit, a scientific problem. For to which of the particular sciences can it possibly belong? It is not a biological problem, or a geographical problem, or a chemical problem. There is no science which claims it. You must stand *outside* science to investigate it. And it is, I should say, a philosophical problem.

I suppose I shall be allowed to say, at any rate, that science deals in some way with nature, with things that happen in nature, with events, with phenomena. Now when anything happens in nature, there are two questions regarding it which human beings are prone to ask. The first is, "*What* happened?" The second is, "*Why* did it happen?" We may distinguish these two questions by calling the first the question of the "*what*," the second the question of the "*why*." To give a very simple example. Suppose a child who has observed for the first time in his life the freezing of a pond. He may ask, "What has happened?" In reply he will be told that when the thermometer falls to below 0 degrees centigrade, the previously liquid water turns solid, its volume increases by roughly one-eighth, and so on. He may also perhaps be told something about the mole-

[1] The second of a series of public lectures delivered at Princeton University.

cular processes involved. But in all such information he is being given simply a *description* of what happens. The answer to the question "what?" is always necessarily a description, and nothing but a description.

But the child may frame his question in a different way. Instead of asking what has happened to the water, he may ask, "*Why* does water freeze?" And if his teacher is a very unsophisticated scientist, he may reply that water freezes *because* the temperature falls below o degrees centigrade, and *because*, when that happens, the molecules do so and so. Here, apparently, the child is being given, not a mere description of what happens, but a reason *why* it happens, or in other words an *explanation*. Thus the question "what?" asks simply for a *description* of events. The question "why?" asks for an *explanation* of them.

Now the essence of my thesis to-day is simply this: that the function of science is to answer the question "what?" but never the question "why?" In other words, its function is simply to *describe* phenomena, never to *explain* them. But it is also part of my thesis that from the earliest times scientists have as a matter of fact attempted, not only to describe phenomena, but also to explain them; and that this false striving after explanations has led science astray in the past, and that it may very possibly lead it astray again in the present and in the future, if the situation is not watched. And what I am going to do is to try to justify these statements.

Science arose in the beginning out of ordinary human curiosity, the curiosity of ordinary ignorant men. But the two questions, "what happens?" and "why does it happen?" are the natural questions which ordinary human curiosity always puts. This simple psychological fact has to a large extent governed the development of science. It accounts for the fact that science from the beginning has always attempted to answer both these questions. And although the demand for explanation is, scientifically speaking, an illegitimate demand, science has never quite freed itself from the idea of explanation which it has inherited from its ancestry in naïve human curiosity.

If one leaves out of account certain tentative beginnings in Babylonia and Egypt, science proper may be said to have begun its career in ancient Greece. And the greatest of the Greek scientists was Aristotle. It is extremely instructive to note how Aristotle set about dealing with natural phenomena. When anything came into existence, whether it was an oak-tree, or a hen's egg, or a flash of lightning, Aristotle thought that there were four principles which must be used in attempting to understand it. You must ascertain, he said, the material cause of the thing, its efficient cause, its final cause, and its formal cause. With formal causes I am not here concerned, and I will say nothing about them. Roughly speaking, and

neglecting fine metaphysical points, the other three principles may be described as follows. The material cause of a thing was the matter of which it was made. The efficient cause was the preceding events or phenomena which brought the thing into being—that is to say, what we should now call simply the cause. The final cause of a thing was the *purpose* which it served in the universe. Thus one might say that in order fully to understand anything one had, for Aristotle, to know three things about it, what it was made of, what its cause was, and what purpose it served in the world.

The first two of these principles, you will see, answered the question "what?" They met the demand for description and nothing else. What is it made of? If you answer that it is made of wood or iron, you are obviously describing it. What is its cause? That is, what other phenomena invariably precede it, or lead up to it? If you answer that question, you are describing not the phenomenon itself, but the one that went before it. You are describing the *series* of phenomena of which this phenomenon is a member.

But the third principle, which Aristotle called the final cause, was intended to answer the question "why?" and to give, not a description, but an explanation. What does the word "why" mean? Well, it is ambiguous, and has several meanings. But one of the commonest interprets it in terms of purpose. We say to a man, "What did you do?" which is a form of the question, "What happened?" And when he has told us what he did, we ask, "Why did you do it?" And by that we mean, "What was your purpose?" And Aristotle thought that we could question nature in the same way. After we had ascertained what nature does, we could then go on to ask why nature does it. The answer, in the case of any particular phenomenon, was the final cause of that phenomenon, the purpose which it served in the cosmos. So that in Greece, the country in which science originated, the conception of the function of science which was entertained by its most distinguished representative was that this function included both the description and the explanation of phenomena.

Throughout the Middle Ages, I should say, Aristotle's conception of science held the field more or less unchanged. But when you come to the scientific revolution of the seventeenth century, to the age of Galileo and Newton, you find a sudden change. Most of the conceptions of Aristotle are attacked. And among these the conception of final causes. Aristotle was accused, among other sins, of having introduced into science the futile and fatal idea of final causes, that is to say, the conception of purpose. The modern scientific era began with the firm determination to vanish final causes altogether from science. Science was not in the future to probe into the cosmic purpose of anything.

It was not that the seventeenth-century scientists were disposed to deny the existence of purposes in nature. They were most of them religious men who believed that the world is governed by God's purposes. But they supposed that these purposes were beyond the reach of science. They might fall within the sphere of religion, or perhaps of philosophy. But science, in pursuing the will o' the wisp of purpose, had been led into a wilderness, had failed to make useful discoveries, and would continue to do so. Its business was to discover the facts, to describe the facts, and to leave all ulterior questions of purpose out of account. So the point which I am trying to make is this. The seventeenth century in effect rejected the Aristotelian conception of science as concerned both with description and explanation, and declared that the proper function of science is description alone. And it is under this banner that modern science has marched forward ever since.

Scientific laws, I should say, explain nothing. Science never *can* explain even the simplest event. At this statement some one may be inclined to cavil. "Surely," it will be said, "modern science does attempt to explain things, and does, moreover, succeed. Surely the germ theory explains many diseases. Surely the law of gravitation explains the movements of the planets. Surely the theory of evolution explains the appearance of new species on the planet." And so on. It is worth while to consider this.

Let us take a very simple case. Suppose that a savage from Central Africa, who has never seen ice, is brought to this country, and is astonished to find water turning solid in the winter. How do you "explain" this to him? You tell him—assuming that he is capable of understanding you—that it is a law of nature that when the temperature falls below 0 degrees centigrade, and when certain other conditions are fulfilled, water turns solid. That is your explanation. In consists in reducing this particular event, happening here and now, to an example of a general law of nature. But what is a law of nature? Instead of telling the savage that in this particular case the temperature fell below zero, and that the water then froze, you tell him that in *all* cases, ***whenever*** the temperature falls below zero, water *always* freezes. You are simply telling him what *always* happens. Your explanation of a particular phenomenon by reducing it to a general law merely consists in saying that this phenomenon, which is happening now, is an example of what always happens. A scientific law, in fact, is nothing but a *description* of what always happens. It does nothing towards explaining *why* it happens.

But, it will be objected, this is merely elementary. The scientist does not merely say that at a certain temperature water freezes. He *explains* the phenomenon by means of molecular processes. He explains that, when the temperature reaches zero, then the mole-

cules do so and so, and the water becomes solid, But what is this, once more, beyond mere description? When the temperature reaches zero, then the molecules do so and so. That just tells us what the molecules do, what happens, not *why* it happens. And however far you go with your molecular, your atomic, or your sub-atomic processes, it will always be just the same. Always you will have description, and never explanation.

Is it different, to take another example, with the law of gravitation? Why does an unsupported stone fall to the ground? On the Newtonian view it is because all particles attract one another with a certain force. But what does this mean? It means only that all particles tend to fall together. This happens here because it always happens everywhere. Newton's law of gravitation, like every other law, simply states what always happens. It gives no reason why.

Nor would it make the slightest difference if we substituteEinstein's law for Newton's. We should only be substituting one law for another. And a law, as such, simply states what always happens.

Now I can well imagine that at this point someone may exclaim, "Well, what on earth do you want? The laws of nature tell you what happens. What else do you want to know? You seem to want to know also *why* things happen. What do you *mean* by why?"

I hasten to say that I personally do *not* want the scientist to tell me anything except what happens. I do not want him to tell me why it happens. In fact, my whole contention is that he should confine himself strictly to telling me what happens, and that when he tries to tell me why it happens, he is deserting the proper function of science. But I will come to that later. Meanwhile let us attend to the last question which was put to me. "What do you *mean* by the question, Why?"

As we have seen, human curiosity always has asked the question "why?" as well as the question "what?" And now the problem seems to be what is it that ordinary human curiosity wants to know when it asks the question "why?" What kind of information does it expect in reply to this question?

Thinking over this problem, I have come to the conclusion that the question "why?" does not really express a desire for information at all. It expresses a *feeling*. It does not proceed from the intellect, but from the emotions. It indicates simply that men want to be made to feel *at home* in the universe. They want to escape from the sense of loneliness, the sense of strangeness and unfamiliarity, the sense even of hostility, which the universe is apt to inspire. For the lonely, the strange, the unfamiliar are terrifying. At this point we tap the psychological source of that desire for explanation which has always haunted the human mind, and which has dogged the footsteps of science. The whole conception of explanation has its

roots here. To explain a thing *means*, I believe, to exhibit it as friendly to ourselves, or at least, as not menacing. When a strange, surprising, hitherto unknown phenomenon occurs in nature, when some totally new experience comes upon us, we want to know that this strange new thing is not going to be a menace to us, is not going to be disastrous to us. When by some intellectual process we have become assured of this, we feel that the phenomenon has been *explained*. That, I believe, is the *meaning* of explanation, and of the question "why?"

But historically this demand of our emotional nature has satisfied itself in two quite distinct ways, and this fact has given rise to two quite distinct types of explanation.

The first way of satisfaction has lain in developing the belief that the world is rational, purposive. We ourselves are purposive beings. Our actions are governed by purposes. If we could extend this conception to the universe at large, if we could suppose that whatever happens in the universe happens because of some purpose, and especially if the purpose were something to our advantage, we should certainly feel more at home in the world. We should feel that the universe is like ourselves, and perhaps even that it is on our side. It would cease then to be strange, terrifying, and incomprehensible. If we could show the purpose which a phenomenon serves in the universe, the phenomenon would then be explained. This was the significance of Aristotle's final causes. And this is *one* kind of explanation.

Explanation by means of purposes is out of date for science. It was definitely banished from science in the seventeenth century. I do not mean by this to affirm that there is in fact no cosmic purpose in the universe; or that this is the view of science. The universe may, for all I know, be governed by purpose. And any science which *denies* that the world is purposive, is, in my opinion, stupid and dogmatic. But science has long ago decided that the question of purpose lies outside its scope. Perhaps it is a question for philosophy, or perhaps for religion. I do not discuss that here.[1] My only point is that this kind of explanation no longer finds a place in science.

But there is a second type of explanation, which depends psychologically upon another way of making ourselves at home with things. It depends upon the psychological commonplace that familiarity breeds contempt. If anything in the universe appears strange, extraordinary, or menacing, then we try to show that it is after all something quite familiar and ordinary. When an utterly new experience comes upon us, threatening us, we try to show that it is after all only an old friend in a new disguise. It thereupon loses

[1] But see the "Note on the Concept of Explanation" at the end of this lecture.

its terrors for us. From this psychological root grows the second type of explanation, which consists simply in reducing the strange to the familiar, the unknown to the known. And my contention will be that, although science has emancipated itself from the first kind of explanation, it has not yet completely emancipated itself from the second.

Is not this what is at the bottom of the common idea that the phenomena of nature are explained by the *laws* of nature? We supposed our African savage to be astonished at the freezing of water. As we saw, you explain this to him by showing that it is nothing unique, but merely an example of what always happens. It is, in other words, nothing strange. It is quite familiar. When you have made him understand this, he feels satisfied that you have explained the matter. And not only the African savage. We all of us feel the same. Which shows that what we *mean* by explanation is simply the showing that the phenomenon in question is not strange, but familiar, that it is something that always happens.

It follows that this idea of explanation is quite arbitrary and unscientific; quite personal and subjective. For what is strange to one person may be quite familiar to another. Hence what explains a phenomenon to me may not explain it to you.[1] And I think you will agree with me that it cannot be the function of science to supply various different individuals with the various different kinds of emotions which will make each of them feel at home in the world. In other words, the function of science is not explanation at all.

But evidence that the idea of explanation has not altogether been dropped from the sciences is found in our linguistic habits, in the ordinary turns of phrase used alike by the layman and the scientist. Nothing is commoner than to hear the question, "What is the scientific explanation of this or that phenomenon?" Nothing is commoner than to hear the question "why?" put to the scientist, and answered by him. *Why* do the planets move in ellipses? *Why* has the mammoth become extinct? And wherever the word "why" is used instead of the word "what," you know that our old mental habit still holds sway, that the old craving for explanation, for making the world seem homely and familiar, instead of strange and alarming, is still alive.

But perhaps you will think that this is a mere verbal matter, a matter of words which does not affect the substance of science. Perhaps it may be a slight terminological inaccuracy to say that the law of gravitation "explains" the movements of the planets. We ought, no doubt, to use some other word. But this is a matter of no importance to anyone except grammatical purists and philosophical hair-splitters. It has never misled science.

[1] I owe this point to Professor Bridgman's *Logic of Modern Physics*.

I am afraid that such a view cannot be maintained. I am afraid that the false idea of explanation has misled science in the past. And with great deference I venture to suggest that it may possibly be misleading science now, and may continue to do so in the future. I will try to give a few examples to show this.

You will remember the common idea that a thing cannot act, or produce an effect, at a distance from the place where it is. Action at a distance, it used to be said, is an impossibility. That maxim has played a great part in the history of thought. And yet it is a pure *a priori* dogma, without the slightest foundation in evidence. To settle whether it is true or not ought always to have been a matter of observation or experiment, and nothing else. If it were found, as a matter of observed fact, that an event X, happening in one part of the universe, was invariably followed by another event Y at a distance of a million miles, and if there were no empirical evidence of anything happening in between, then it should have been declared, on the basis of such evidence, that X was the cause of Y, or in other words that X acted at a distance.

But what actually happened was that *a priori* dogmas were allowed to intervene. The question was not settled upon the evidence, but by supposed considerations of pure reason. It was supposed to be *incomprehensible* that anything should act at a distance. And, therefore, it was declared to be impossible.

Now what is this supposed incomprehensibility? Examine it carefully, for it is profoundly instructive in the ways of human thought. You think that if an event *here*, say the blow of a hammer, is followed by another event *here*, say a blue flash, as may happen in an explosion, then this is quite comprehensible, and you will call the two events cause and effect. But suppose it is alleged that the blow of the hammer here is followed by a blue flash a million miles away, with nothing happening in between, then you say this is incomprehensible. I want to know what you *mean* by "incomprehensible."

In the first, you do not mean "logically self-contradictory." For there is no logical contradiction in a blow here being followed by a blue flash a million miles away. The proposition, "a blow occurred here," is obviously not contradicted by the proposition, "a blue flash occurred a million miles away."

I will suggest a second possible meaning. The only way in which science ever understands any phenomenon consists in describing it accurately and in detail. The freezing of water is understood, so far as science can understand it, when all the molecular and other processes involved have been described. Therefore a thing is "comprehensible" for science if it can be described. And it would be "incom-

prehensible" if, for some reason, it could not be described. But now, there is nothing difficult to describe in a blow of a hammer here followed by a blue flash a million miles away. It is just as easy to describe as the blow of a hammer here followed by a blue flash here. The only difference between the two cases consists in the intervening distance in the first case. And all you have to do is to insert that fact in your description. The one, therefore, is as scientifically comprehensible as the other. This, therefore, cannot be your meaning. Or, at any rate, action at a distance is not incomprehensible in this, the only scientifically legitimate sense.

By a process of elimination I arrive at the following conclusion. What you really mean by the word "incomprehensible" is simply "unfamiliar." Man in his ordinary avocations of life has been accustomed for hundreds of thousands of years to what we may call action at one place. It is the ordinary type of action. We have seen one thing hitting another and this other thing bouncing off. All man's ordinary everyday experience has been of action at one place. Such action is absolutely familiar. And it seems to need no explanation. So when man suddenly comes across a case of apparent action at a distance, such as gravitation, it seems astonishing. He declares it to be incomprehensible and impossible. And he demands that the appearance of it be explained. And by explanation of it he *means* that it be shown to be really a case of action at one place after all. Then it will become comprehensible, because it will seem familiar.

As against this it may be urged that gravitational action at a distance, as in the case of the stone falling to the ground, has always been familiar to mankind, quite as familiar as the bumping and hitting of things against one another. I reply that this was not thought of, by pre-scientific man, as action at a distance. It was not realized that the *earth* causes the stone to fall. The cause of the stone falling was supposed to be its own *weight*, which was a property of the stone itself. It was therefore the stone that acted, and this was an example of action at one place. It was only when science introduced the idea of gravitational *attraction* of one body by a distant body that man for the first time had the experience of action at a distance.

The demand of the average human consciousness for an explanation of gravitation actually set science to work. It resulted in the immense amount of time and labour devoted by scientists of an earlier generation in attempts to explain gravitation, that is, to reduce it to a case of action at one place, by means of such hypotheses as that space is full of flying particles which, by beating upon the unprotected sides of bodies, tended to drive them together.

These attempts, then, and the *a priori* dogma which led to them, namely, that action at a distance is impossible, were actual examples

of how science has been influenced by the false idea that its function is explanation.

The same idea is at the bottom of the view that for the propagation of light through space there is necessary a medium. I am not here concerned with the question whether there actually is or is not such a medium as the ether of space. That is a matter for the experts. But what I am concerned to say is that whether there is or is not such a medium is a pure question of evidence It must not be decided by *a priori* dogmas. And the suggestion that, apart from any actual empirical evidence of the existence of ether, it must necessarily exist because it is *inconceivable* that light should travel across space without a medium is simply a deduction from the *a priori* dogma that action at a distance is impossible. There is nothing *a priori* impossible in the suggestion that certain events in the sun have here on the earth, or on any other distant object, the effects which we attribute to light, without anything, either particles or waves, travelling across the intervening distance.[1] Such a view may, of course, be wrong, and I do not say that there is anything to recommend it. But if anyone thinks it *a priori impossible*, it must be because he supposes that cause and effect cannot jump across a distance, but must be propagated from point to point, or in other words that action at a distance is impossible. And this view we have shown to have its roots in the false concept of explanation.

If experts hold, on the basis of positive evidence, that light is propagated through a medium, then that conclusion must be accepted. But if they hold this view merely on the basis of the supposed impossibility of causal action jumping over a distance of space, then we should have a case of science being misled by the false idea that its function is explanation.

All questions of fact ought to be decided solely upon the basis of evidence without the intrusion of *a priori* dogmas. One might lay down the principle that nothing that is actually observed to happen in nature, nothing for which there is the warrant of experience, ought to be declared impossible on the ground of any supposed *a priori* law. And I would call this *the principle of radical empiricism.* The phrase "radical empiricism," I have, of course, stolen from William James. But James used it in a different meaning.

But to return to the concept of explanation. One may find, I think, another example of its unfortunate influence in Newton's law of gravitation. Newton introduced into this law the concept of "force." The present tendency, I believe, is to dismiss gravitational force as a fiction. Now quite apart from any questions raised by the work of Einstein, it appears that Newton could perfectly well have stated his law without introducing the concept of force at all. He could

[1] This suggestion, too, I owe to Professor Bridgman.

have stated it in terms of empirically verifiable factors, such as velocities, masses, and distances. Why then did Newton introduce the concept of force which was unnecessary even for his own law? What was his motive in so doing?

The motive, I think, was the ordinary human craving for explanation, for an answer to the question "why?" If Newton had simply stated the relations between the masses, distances, and velocities of moving particles without any mention of forces, he would have given a perfectly good description of what happens and therefore a perfectly good law of gravitation, so far as the data available in his time allowed. But it would have appeared a mystery simply to say that, as a matter of brute fact, particles move in such and such ways and with such and such velocities, and that that was an end of the matter. People would have asked, "*Why* does this happen? *Why* do particles move in this way? *Why* do they move at all?" Newton obviously asked himself these questions and was puzzled by them, and thought he ought to give some reason. And he answered, "Particles move because of forces." And this seemed to explain the mystery because the conception of force is derived from our everyday familiar sensations of stress and strain in our muscles. The explanation consisted in reducing the strange and unfamiliar motions of the heavenly bodies to the ordinary experiences of pushing and pulling of our daily life. Thus the otiose concept of force was introduced because Newton was not satisfied with a law which should simply describe what happens, but erroneously thought that the law should also explain *why* it happens.

The theory of gravitation, however, has been revolutionized in recent years. The concept of force is no longer the centre of it. Einstein's law is not stated in terms of forces, but in terms of geometry. We might suppose, then, that the objectionable features of illusory explanations by means of fictitious entities such as forces would have disappeared. Let us see whether this is so.

I do not profess to understand the mathematics of relativity. But when those who do understand it attempt to enlighten the darkness of us others, we find them using some such language as the following. Space-time, they say, is curved or bent round the sun and other massive bodies. Its geometry is non-Euclidean. One must conceive, then, that space-time has, as it were, hills and valleys in it. Because of these hills and valleys the planets cannot run in straight lines. They have to run round about. This explains the curvature of their orbits.

This, of course, is merely the sort of language used by popularizers, and I dare say it may make some sensitive mathematicians shudder. But it must be remembered that some of these popularizers are themselves experts, and they are presumably responsible for the

language they use. It seems a fair conclusion that they suppose that such language, though popular, is not wholly false. They think that, in some sense, space-time really is bent, and that this curvature explains the curved motions of the planets.

When the plain man hears such language he is apt, if he is courageous enough to open his mouth at all, to express his puzzled bewilderment somewhat as follows. "I can understand," he may say, "the idea of a bent stick, or a bent material object of any sort. The stick is bent *in* space. But how can space-time itself be bent? What is there to *be* bent? And what is it bent *in*? And if space-time is bent, and so finite, what is outside it?"

I do not know what the expert says in reply to this no doubt crude talk. And I will not pursue the dialogue further. But the whole situation suggests certain reflections to me.

I suspect that there is something wrong here, and that the root of the trouble lies once more in the baneful influence of the false idea that scientific laws ought to explain phenomena. Is not the true position this? Einstein's law, in its strict, that is, its mathematical, form, contains nothing about hills and valleys and bumps in space-time. It contains nothing but mathematical formulae. These formulae are simply a generalized geometrical description of the curves which might be followed by all possible gravitating bodies. They do not explain anything at all. They are simply a description of certain curves.

Suppose you draw on the blackboard a certain curve, say, an ellipse. A simple geometrical equation will describe that ellipse. Such an equation would not, of course, explain why a particle, which happened to be travelling in that ellipse, was doing so. It would simply describe the curve. Now suppose you draw on the board a number of other ellipses of varying eccentricities. You can get a generalized mathematical formula which will describe, not one of the ellipses, but all of them. Once again this formula will not explain why a number of particles which happen to be travelling on these paths, are so travelling. It will be simply a generalized description of all the curves. Suppose, finally, you draw on the board a number of other curves, circles, parabolas, and so on, in addition to the ellipses. You can still get a more generalized formula which will describe them. I believe that Einstein's law of gravitation is nothing but such a formula, only it describes, not merely a few ellipses and circles, but every possible path of every possible gravitating body. It does not explain their movements. It merely describes them.

No doubt it is the case that, in order to reach this vastly generalized and complicated description, it has been necessary to introduce time as a fourth co-ordinate, and to make use of non-Euclidean geometry.

But that does not alter the principle. The non-Euclidean geometry was not introduced to explain anything, but simply for purposes of description.

And it was rendered necessary only because of the variety and complication of the curves which had to be described. You might imagine a universe in which all possible gravitating bodies moved in circles. In such a universe the simple equation of the circle would *be* the law of gravitation, and neither time as a fourth co-ordinate, nor non-Euclidean geometry, would be necessary.

We are usually told that Einstein's law is a description of the curvature of space-time. This, I am convinced, is absolutely meaningless. It is absolutely meaningless to say that space, or space-time, are either curved or straight, that they are either non-Euclidean or Euclidean. A stick may be bent or straight *in* space. But the space in which it lies is neither. It is usually assumed that space had hitherto been regarded as Euclidean, and that this was quite easy to understand, but that with the advent of Einstein we have to think of space as non-Euclidean. Now the essence of my present contention is that it was quite as meaningless to say that space is Euclidean as to say that it is "bent." It is only things *in* space which can be described in either of these ways. Space itself is absolutely amorphous. It has no shape; and therefore no geometry. And if we now ask, "What is it, then, that in Einstein's law is described by the formulae of a four-dimensional non-Euclidean geometry?" I answer that it is the curves followed by gravitating bodies. The law is not a description of space-time, but a generalized description of certain curves.

But the common way of looking at the matter supposes that space-time is itself curved, and that this curvature *causes* the planets to move as they do. There are supposed to be, as it were, two distinct facts, first the curvature of space-time, and then, secondly, the resulting orbits of the planets. These two are separated, and the first, the curvature, is then supposed to be the cause of the second, the planetary motions.

Now if I were to say that the cause of this table being square is that it occupies a square piece of space, you would rightly think such a statement nonsense. You cannot separate the space from the table which occupies it, attribute a shape to this pure space, and say that this is the cause of the table being square. You cannot in point of fact attribute any shape at all to pure space. It is tables and chairs, material things *in* space, which have shape. In just the same way, I think, it is nonsense to speak of space-time itself as being either Euclidean or non-Euclidean, *apart* from the things which are in it. And it is just as meaningless to say that the hills and valleys in space-time *cause* the planets to move in curved courses as it would

be to say that the square shape of the space which this table occupies *causes* the table to be square.

But because this is not realized, the illusory idea of causal explanation slips in. Space-time itself is supposed to have hills and valleys in it, and these are supposed to thrust the planets out of their straight courses. As if the hill or the valley were all there waiting in space-time before the planet comes to it.

What is this but the old idea of pushing and pulling? Only instead of the planets being pulled by forces, as they were for Newton, they are now being pushed by coming up against the sides of hills in space-time, just as the billiard ball is pushed out of the straight by an unevenness in the surface of the table.

What, then, is it which has misled so many writers on relativity? What is the psychological cause of the mental confusion which I have just been trying to clear up. I answer that the root cause of all this confused thinking is *the craving for explanation,* the desire to try to show that Einstein's law, not merely describes, but *explains* the phenomena.

Of course formulae in non-Euclidean geometry may correctly describe the motion of the planets. But I suggest that the curvature of space-time is just as fictitious as the forces of Newton. And it has been foisted into discussions of relativity for precisely the same reason as forces were foisted into Newton's law. Forces were supposed to explain *why* bodies move as they do. They explained these motions by appealing to familiar sensations of muscular strain. And now the hills and bumps in space-time are introduced for an identical reason They make the phenomena seem familiar by comparing them to what happens when I go round a hill instead of through it. Einstein's law, as a pure mathematical formula, explains nothing. It simply says, "This is what happens. Bodies move in such and such curves." But inevitably the human mind asks, "*Why* do they move in these curves?" There is, of course, no answer to this question. It is meaningless. But just as Newton was puzzled by it in regard to his law, and answered, "Oh, it is because of forces," so now modern writers, equally puzzled by the question "why?" in regard to Einstein's law, say, "Oh, it is because the planets are pushed about by the curvature of space-time." This too, like the forces, seems familiar and easy to understand. It seems to explain the phenomena, that is, to make them familiar, until one realizes that the whole idea of scientific explanation is a bogus idea.

And though it is true that this talk about hills and valleys in space-time is a mere popular mode of expression, still I am not convinced that men of science, in their talk of "expanding universes" and "exploding universes," do not take it at least half-seriously, some of them perhaps quite seriously. I am not convinced that their

own thought is not infected by it. And if so, I do now know what misguidance of science may not follow. And if there is a misguidance, then it will be due to the fact that science has not *even yet* completely emancipated itself from the belief that its function is to explain phenomena.

I am not suggesting that the current scientific theories of expanding and exploding universes are false. That, again, is a matter for the experts, not for the philosophers. No doubt these theories can be *interpreted* so as to be true. And I dare say their pure mathematical expression *is* true, just as is Einstein's law of gravitation. They doubtless describe admirably the known facts about the motions of distant nebulae and other astronomical entities. But if they are interpreted to mean that space itself, or space-time itself, is a sort of round ball which is getting bigger and bigger in the middle of nothingness, with nothing, not even empty space, outside it, then I am certain that it becomes perfectly meaningless. And I do think that there is grave danger that, not only the minds of the general public, but the minds of scientists themselves, may be misled.

I do not know whether I have succeeded in convincing you of anything. But what I have been trying to prove to you is simply this: that such questions as "What are the exact functions of science? What precisely is its business? What is it trying to do? What ought it to try to do? What are its boundaries?" are important questions for the scientist himself. Because, if they are wrongly answered, or if, as more often happens, they are not considered at all, then science may be seriously misled *in its own field.* Such questions are usually regarded as belonging to the philosophy of science, and are studied by philosophers to the best of their ability. Perhaps it is a pity that scientists themselves do not usually investigate them, because they might study them so much the more effectually. The important thing, however, is that they should be studied.

Note on the Concept of Explanation

The reader may ask whether explanation, if it is not the business of science, is the business of philosophy. Should we, in other words, admit that there *is* such a thing as explanation, that it is a meaningful concept, even though science is not the place for it? Or should we say, on the contrary, that the whole idea of explanation is illusory, wherever it is found, whether in science or philosophy? Obviously this is much the same as asking whether in the last resort the universe is rational or irrational. If there is no such thing as explanation at all, then all we can say is that the world is as it is, and that things happen as they do, that that is the end of the matter, and that there is in the last analysis no rhyme or reason for anything. Equally

obviously, this is the vastest question that the human mind can ask, and one which it is ridiculous to treat in a footnote! Nevertheless, since the question is bound to frame itself in the mind of the reader of the lecture, I think it is better at least to indicate my personal attitude to it in however brief and unsatisfactory a way.

In the lecture I have mentioned only two types of explanation. One is teleological explanation, or explanation by means of purposes. The other is explanation by familiarity.

There is, however, a third type of explanation which I did not think it necessary to mention in a lecture devoted exclusively to science, because this third type of explanation has never been used in science, and has made its appearance only in the writings of philosophers. I will now say something about this.

The question "why?" may mean "for what purpose?" If so interpreted it gives rise to teleological explanation. Or it may indicate simply a desire to have the unfamiliar reduced to the familiar, and this gives rise to the second type of explanation. But thirdly, the question "why?" may be a request for a *logical reason* or *ground.* Thus the logical reason for any proposition is that prior proposition which implies it and by means of which it is proved. If A = B, and B = C, then A = C. And the facts that A = B, and B = C, may be given as the logical reason why A = C. In this sense, too, the axiom of parallels (in Euclidean geometry) may be given as the reason why the three angles of a triangle are equal to two right angles.

If the question "why?" is interpreted in this sense, then we get the third or *logical* type of explanation. To explain a fact will then mean to give a logical reason for which the fact follows. If the world could be logically deduced from some first principle, if the relation of the ultimate reality to the world could be exhibited, not as the relation of cause to effect, but as the relation of logical antecedent to logical consequent, then the world would be so far, in this sense, "explained."

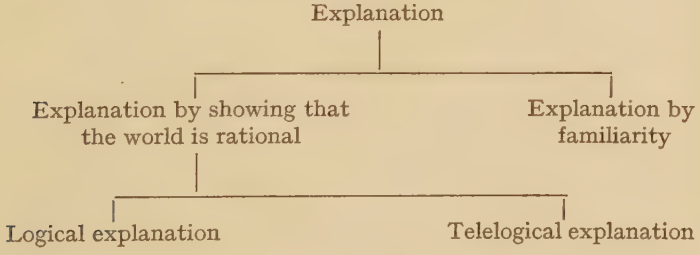
This idea makes its appearance in the philosophy of Spinoza, in most modern idealism, but most clearly of all in the philosophy of Hegel. Suppose that the universe consists of the things A, B, C, D, . . . etc. If one could show that A logically implies B, while B logically implies C, and so on throughout the whole universe, then everything in the universe might be said to be explained. B exists *because* A exists, and A is the logical reason for B. The whole universe would be rational, i.e. logical. Hegel attempted to deduce the main features of the universe (categories) from one another in this way. To give an example. He tried to show that the idea of *being* logically implies the idea of *becoming* (change). If this were valid, it would explain why the universe is everywhere characterized by imper-

manence and flux. For if being logically implies becoming, then any being whatever, from an atom to a nebula, must *necessarily* be in a state of becoming or flux. And Hegel attempted to carry out this kind of explanation for all the features of the universe.

To this it may be objected that the first term in the series, A, must itself be an unexplained mystery, since there is no prior term by which it can be explained. And this means that the whole series is really a mystery, and nothing is, in the end, explained. Hegel attempted to meet this difficulty by thinking of the universe as a closed system, which we may symbolize by a circle. The beginning and the end meet. The first term, A, explains all the others until we come to the last term, Z. Here the circle returns upon itself, for Z logically implies A. Thus there is no unexplained term, no ultimate mystery. The universe is a closed system of which every term really implies every other term, so that the whole system is self-explanatory.

It is right to mention that Hegel's own philosophy is an attempt to blend together both the teleological and the logical types of explanation.

From the point of view of motivation, logical explanation may be grouped with teleological explanation, since the motive of both is to show that the universe is rational, and therefore like ourselves. For the word "rational" means either logical or purposive. A man is said to be rational if he is logical, and he is also called rational if his conduct is governed by intelligent purpose. Thus the three types of explanation may be arranged as follows:



As to the question whether any sort of explanation is ever possible or whether in the last resort all explanation, even in philosophy, is as illusory as we have seen it to be in science, the position seems to me to be as follows. Explanation by familiarity is totally worthless both in science and philosophy for the reasons given in the lecture. The other two kinds of explanation fall outside science, and have their place in philosophy, if anywhere. Have they, then, any real place even in philosophy? Opinions differ about this.

(1) *Teleological Explanation.* We may feel vaguely that the universe is driving towards something, and we may envisage this as

goodness, beauty, or what not. And there may in all this be a real groping towards some truth. But mere feelings, even though they may vaguely indicate something true, do not constitute knowledge. And as far as any real or definite knowledge regarding the cosmic purpose is concerned, we may well think, with Omar, that

> The revelations of devout and learned,
> Who rose before us and as prophets burned,
> Are all but stories which, awoke from sleep,
> They told their comrades and to sleep returned.

And it is not unlikely that philosophy will conclude, as did science in the seventeenth century, that "divine purposes" are beyond human comprehension, and will turn to more profitable fields of study where something can be accomplished. At any rate, no philosophy so far has had the least success in the teleological explanation of anything.

(2) *Logical Explanation.* The position is even more hopeless than in the case of teleological explanation. For all I know, everything in the universe may logically imply everything else. But no one has ever shown that it is so. Hegel's philosophy is the only attempt ever made on the grand scale, and it was, in my opinion, completely unsuccessful. And this is also, I think, the general opinion at the present day.

Hence the prospects of philosophical explanation do not appear to be rosy. Theoretically philosophy might still perhaps, in spite of past failures, aim at explanation. But in practice I should say that the philosopher, like the scientist, has never succeeded in explaining a single solitary fact.

Has philosophy, then, a descriptive function, like science, to which it can turn and do useful work? The answer is that it has. In fact, much of the best philosophical work, both in the past and at the present time, has been purely descriptive. This has always been true, for example, of the British empirical tradition. But philosophy will be descriptive of principles more general in character than those which form the subject matter of science. For example, to give a description of particular causal laws is the business of particular sciences. But to give a description or definition of the principle of causality as such is one part of the business of philosophy. Is the essence of causality properly described as simply invariable sequence? Or should the ideas of necessity, compulsion, force, be included in the description?[1] These are the kinds of questions, I think, to which philosophy can attempt an answer with some hope of success, and

[1] This example will make it evident to philosophical readers that what I have here called the "descriptive" function of philosophy is much the same as what many philosophers call "analysis."

without condemning itself to that futility which seems always to attend upon its efforts at "explanation." Mediaeval science stagnated for centuries until the seventeenth-century scientists made an end of attempts to pursue final causes. Is not the stagnation and futility which have always been charged against philosophy probably due to the fact that philosophy still hankers after explanations?

Hence if any philosopher wishes to include explanation among the functions of philosophy, I should not entirely warn him off the ground. There is just the *faint* possibility that he may be right and that he might succeed. For *if* explanation is possible at all, it certainly is the business of philosophy and not of science. But I should unquestionably regard his enterprise with the same sorrowful tolerance as that with which one views any other forlorn hope. Thus while making a polite bow to the possibility that there may be such a thing as explanation, I should personally advocate a philosophy which excludes explanation from its objectives. I should advocate a reform in philosophy similar to that which occurred when science in the seventeenth century turned its back upon final causes. Only in such a reform, I believe, lies the possibility of advance.

GREAT THINKERS

(VI) DESCARTES

PROFESSOR A. BOYCE GIBSON

THERE is a belief among the aborigines of Central Australia that the attributes of the divine ancestor are parcelled out among the component members of the tribe: and there are long periods in the history of ideas in which "divine philosophy" is similarly dismembered. The reason is that all great philosophical systems rest on a balanced tension of contemporary cultural elements, and as these change, and especially if they change rapidly or decisively, the unity of thought under which they have been gathered begins to disintegrate. There follows a period of piecemeal experiment, in which the material of philosophy is too rich and too disorganized to be appropriated in a single conspectus: a period in which there will be no great philosophers, and perhaps little conscious philosophizing, not because philosophic genius is lacking, but because there is no scope for it till the various special tendencies of the age have achieved a certain internal development and a definite sense of direction.

Such a period was the Renaissance. Not only did it encourage fruitful comparisons by confronting the authority of the Church with the still older authority of classical civilization, but it established a new outlook in science and religion, and out of the resultant intellectual chaos came a new cultural *motif*, the passion for personal independence. While these changes were taking place, the official philosophy stood still: and indeed, vested interests apart, there was little else it could do. In philosophy a culture becomes self-conscious: and first of all it must be clearer about its own nature than it can possibly be in its early stages. But the time came, early in the seventeenth century, when a provisional estimate of the forces at work became possible: and fortunately (for the hour does not always bring forth the man) a "great thinker" was there to attempt it. That thinker was Descartes.

The mental equipment required by the philosopher in an era of reconstruction is not at all points the same as that which is needed at the culminating synthetic stage of development. Then what is especially indispensable is a wide intellectual sympathy which extends to every sphere of knowledge the range of a centralizing logic. For this task Descartes might have been ill adapted. He

was too impatient, too contemptuous, too much a man of high lights and straight lines, too little inclined to bend in accord with the significant sinuosities of experience. But in the initial stages a certain radicalism of thought and temper is the supreme virtue. The old outlines have to be cleared out of the way before the new factors can assume philosophic expression. What is important is that the philosopher shall be acquainted from the inside with the important tendencies of the new culture, reproducing its conflicts microcosmically, and not without agony, in his own soul. He does not need a sense of history (which Descartes completely lacked) but he does need a sense of contemporaneity. To such a demand Descartes was entirely equal. As a mathematician, he was the discoverer of co-ordinate geometry. As a physicist he propounded the theory of vortices, which, if soon displaced, seriously occupied the attention of his contemporaries. He was independently and disinterestedly concerned for religion, and in the Oratorian circle had learnt to dissociate it, in the modern fashion, from all cosmologies. Finally, he shared with the men of the Renaissance a spirit of personal initiative and sceptical freedom on which, as all other certainties gave way under the dissolving influence of methodical doubt, he was to stake the whole success of his great intellectual adventure.

The danger to which a philosophical personalism is always exposed is that of turning philosophy into psychology. Descartes escaped it, for the self which is his primary metaphysical certainty is a thinking self, and subject therefore to the authority of reason. It is in the name of reason that he dismisses tradition: it is his special task to disinter its eternal principles from the venerable débris of accumulated learning. But, with the fine precision of his nation, he knew that reason could be revealed only in actual reasoning: and so his personalism and his rationalism go together. They are part of a single protest against the laborious compilation of precedents which condemned philosophy to proceed by increasing subtlety of self-criticism alone, to the exclusion of new non-philosophical material now clamouring to be heard. It may be that his personal approach to philosophy made him press too hard the antithesis between authority and reason: but it fairly excluded any appeal beyond reason save such as reason itself could justify. Moreover, where there was as yet no rational solution of a problem in sight, as in the case of morals, Descartes was almost excessively emphatic in recommending a provisional conformity with established usage.

The first rule of method laid down by Descartes for the regulation of the understanding is "never to accept anything as true which I did not evidently know to be true." There are two sides to this injunction: a moral and an epistemological. There are out-

standing temptations to emotional bias which all sound thinking must resist, and sooner or later they are all reducible to precipitate judgment. This, according to Descartes, is chargeable to the will, which in its "potential infinity" outruns intellectual certainty. A practical illustration of the error induced by the incongruity is the acceptance of sensory evidence at its face value. Another is continued reliance on early instruction which, in the nature of things, could not have been rationally sifted. A third is illustrated in the actual life of Descartes, who withdrew from the distractions of Parisian society in order to keep the field clear for meditation. The intellect must maintain its directness of vision, or it will misapprehend its object; and the will to defend it is part of morality.

The fundamental bearing of the rule, however, is epistemological, as the end of such morality is to hold fast to knowledge conceived in a peculiar way. The primary object of all the rules of method is to give an account of the reasoning process which shall be true to the actual procedure of science, and thus to eliminate the initial obscurities which Descartes holds to have been incorporated into the Aristotelean philosophy of nature. Now in science as Descartes understood it, that is, in physics, the investigator selects from what is given in perception what he desires to isolate for closer study. Descartes took the momentous and questionable step of qualifying this abstraction as real, thereby committing himself, and philosophers for some time to come, to a materialistic interpretation of nature, and leaving the phenomena of perception uneasily suspended between two worlds. At least one reason why Descartes condemns reliance on the senses is that it has given rise to the pseudo-science of powers and essences, while true science must pass beyond it. His religious prepossessions, however, pointed in the same direction, for the Oratory was in the straight line of succession through St. Augustine from Plato: and Descartes also claimed that an analysis of perception itself (of a piece of wax, for example) will show that there is a hard core which is irreducible, namely extension in space, together with much else that is both changing and fortuitous, and so a mere deceptive appearance.

The original clarity of ideas, from which all reconstruction must begin, is thus effected by a series of disjunctive judgments in which what is clear is rendered distinct from what is obscure: whence the phrase, "clear and distinct ideas." This is the bearing of the second rule of method, which enjoins a thoroughgoing analysis of presentations into their constituent elements. It is Descartes's belief that perfect clarity is in fact attainable; that the confusions of his predecessors have been due to defective analysis alone; and that the "natural light" assures us that clear and distinct ideas are

true. Provided we eliminate confusion, the rational intuition which is the soul of reason will go straight to its goal.

Original intuition is immediate: it does not depend on the previous recognition of general principles, such as the law of contradiction. On the contrary, all such laws are revealed in the first place in the concrete context of rational intuition. Nor does the truth of intuitions depend on a system of judgments to be later unfolded. It is in principle both ungrounded and incorrigible. But it is not on that account unconditioned. Indeed, the fact that it needs no ground and suffers no correction is due to a certain structure of the universe. The epistemological solution pushes us back to metaphysics.

The isolation of essential factors through analysis is not, however, the whole of scientific procedure. The positive aspect of it is the construction of hypothetical syntheses followed by exhaustive verification. To these activities Descartes refers in his third and fourth rules of method. But he is by no means clear in his detailed account of them. He describes the constructive aspect of science as "deduction," as if it were analytically deducible from the first principles isolated by the original disjunction. Either the term is misleading, or Descartes is guilty of a contradiction; for that which is clearly and distinctly perceived is already a "simple nature" and therefore insusceptible of further analysis. On his own showing, there must be a synthetic element in scientific knowledge: a putting together of elements detached from various contexts, in a new and significant order. But in actual scientific procedure what is synthesized is the evidence of the senses: concepts, as Kant was to point out, are not objects of intuition, but principles of interpretation. Descartes, having eliminated the senses, has nothing left to synthesize, except the general principles which should be doing the synthesizing. This is why, in the long run, he slurs his third rule of method, and falls back, inconsistently enough, on an analytic theory of knowledge and the doctrine of innate ideas.

As time went on, it became increasingly clear that the understanding of nature depends on the range of observations and the relevance of the questions put to nature by the investigator. Descartes was probably misled by an over-simple conception of the application of mathematical formulae to nature. His geometrical view of physics implied the annihilation of the material of physics, besides forcing him to appeal to a *deus ex machina* to explain motion. Whatever the cause of the confusion, the consequence is serious enough. Descartes is unable to explain what part is to be played in science by verification. Theoretically, his physics requires no experiment, and its use is purely expository. If knowledge is of the relation of concepts which are assumed in advance to cover particular cases, and knowledge advances solely through the manipulation of

the concepts themselves, there can be no relevant verification at all. Thus Descartes's theory of science does justice neither to contemporary practice, nor to his own practice, nor to his programme as set forth in the rules of method. It is a striking illustration of the power of established modes of logical thought over the most temerarious innovator.[1] But by insisting on clarity prior to construction, and by pitting intuition against precedent, he cleared the way for a more adequate estimate of the significance of science at a later date.

But apart from difficulties of detail, Descartes's whole epistemological position depends on the assumption that what is clearly and distinctly perceived is true. Now this is possible only if there is some proportion between our minds at their best and the objective order of the world. That such an order should exist is not self-evident: and Descartes personifies the possible discrepancy in the shape of the wicked genius. Now the strength of the wicked genius lies in his strategic occupation of the passage from subject to object, which he blocks at all points. He can be circumvented only if there is no need to attempt the passage, that is to say, if there is a form of existence which is from the beginning both subject and object, which both thinks and exists. Such a form of existence can be discovered, at the end of a persistent process of methodical doubt, in the thinking, or, more accurately, the doubting self; for, in order to doubt, I must exist: and of this I am aware in an unmediated act of intuitive introspection, independently of any further truth whatever.

In one sense the *cogito*, i.e. the identity of thought and existence in the thinker, is a clear and distinct conception just like any other: and Descartes sometimes holds that its metaphysical certainty forthwith justifies all the rest. But it could not provide the necessary justification if it were not in some sense unique, for nothing can be justified by a mere duplicate of itself. Perhaps it may be said that "the difference is one of metaphysical status, not of internal structure."[2] The truth of other clear and distinct ideas depends on the truth of the *cogito*, not merely because the *cogito* is a clear and distinct idea, but because it is metaphysical. But even so the dependence is not direct. A metaphysical self cannot give metaphysical status to its objects: however much I may think a statement to be true, it does not follow that it *is* true. Only in a completely rational universe would the conclusion hold. The wicked genius, who has recoiled from the centre, has now to be driven from the outworks. Descartes has to widen the scope of metaphysical reality till it includes all existence: and he has to

[1] For the development of this point, see C. R. Morris, *Idealistic Logic*, ch. iv.

[2] See my *Philosophy of Descartes*, p. 161, note.

start with only the thinking self. His next step is to follow its expanding implications till they include the existence of God.

The originality of Descartes's proofs of the existence of God lies less in their argumentation, which is full of scholastic reminiscence, than in their starting-point, which lends a new meaning to old terms and old methods of reasoning. They all start, directly or indirectly, from the self of the *cogito*, with its baffling sense of defect, and its no less baffling sense of perfection. This is true even of the revived ontological proof: the essence from which, in the special case of God, it is claimed to be permissible to pass to existence cannot, in the context, be conceived abstractly, but only as an idea or concept in the human mind. The other proofs, which proceed respectively from the idea of a possible perfection and from the fact of the self which possesses it, to inquire into their origin, leave no room for ambiguity. The general contention is that perfection cannot issue from imperfection, and that the imperfect cannot have created itself, because if it had it would have created itself perfect. With the theory of evolution fresh in our minds we may find it hard to assent to such propositions as statements about history. But regarded as statements about the conditions of the existence of the imperfect as such they have a permanent claim on our attention. The existence of the imperfect may be traceable to the less perfect: but its consciousness of itself as imperfect implies a reference to an independent standard of value, or, as Descartes would have said, of perfection.

There is no reason to doubt that Descartes was satisfied with his proofs of God's existence, or that he was entirely sincere in his frequent professions of piety. The recent researches of French scholars, and particularly of M. Gilson, have revealed his religious preoccupations so convincingly that it is no longer possible to suppose that the religious bias of his metaphysics is merely a cover for his theory of science, or unscrupulously adapted to its needs. Moreover, the emphasis, even the exclusive emphasis, on the approach to God through personal experience was thoroughly in accord with the religious tendencies of the age, not only among Protestants, who openly acknowledged it, but also in the Catholic Church itself: and in stating it philosophically Descartes was fulfilling his function of bringing under a rational synthesis the cultural developments of recent history. But there is also no doubt that the exclusively personal approach saved Descartes from embarrassment on the side of science. It enabled him "to banish final causes from the universe," or, more strictly, from nature. As long as nature is thought of as adapted in detail to formal qualitative principles, natural law will, in its own province, be at the best based on abstraction, and at the worst subject to arbitrary interference. But as

Descartes appeals not to the incompleteness of nature, but to the incompleteness of the person, he is able to assert at the same time both that nature as a whole is dependent externally on God, and that it is a closed quantitative system wholly regulated by natural law. Dependence as a whole does not threaten the integrity of science, but only the *amour propre* of scientists. As a matter of fact, Descartes usually envisages God in relation to nature simply as creator, though he occasionally hints that the mechanical system of nature, internally free from teleology, none the less fits as a whole, though distantly and indirectly, into a teleological structure.

The proofs of the existence of God raise at once the most controversial of all the issues connected with the interpretation of Descartes: the Cartesian circle, and the nature of the divine guarantee. In the first place, the metaphysical validity of the causal axiom is assumed to prove the existence of God, without whose concourse no axiom has more than an abstract validity. There is here a vicious circle, which can be escaped only by reinterpreting one or both of the arguments. If causality could be softened into implication, or if the intuition of the self were held to include from the first a wider intuition of God, the supremacy of God over the primary axioms could be indicated without the prior assumption of those axioms, and there would be no contradiction. Or if the truth of axioms did not require the guarantee of God, but were self-evident in its own right, and the guarantee were invoked merely to certify that what I now remember to have been true is in fact identical with what I once perceived to be true, then the primary axioms could legitimately be used to prove the existence of God, and again there would be no contradiction. In reply to the charge of circularity, Descartes usually takes the second way of escape; and most of the critics think it is a fair one. Actually it ignores several capital passages, and it leads to the conclusion, which Descartes could never have accepted, that the elements of a rational universe are independent of the concourse of God. In another mood, more disinterested, because there is no question of escaping from a dilemma, he actually asserts that God might have created the "eternal verities" otherwise than He did: and whatever the difficulties of this theory, it is at least inconsistent with the view that the verities are self-subsistent.

The first way of escape also has its difficulties, as it tends to reduce the whole of metaphysics to a single simultaneous intuition of the self and God. But, though it is hard to state it in a shape free from formal objection, it does, I am convinced, embody the underlying spirit of Descartes's philosophy. The apprehension of the self in the *cogito* is not the apprehension of a distinct entity. The aspirations which form its link with God, and in view of which it is conscious of its defect simultaneously with its existence, "actually

constitute it, and without them it would simply not be there at all." If this is so, "the discovery of God is effected, not by argument, but by sustained attention to the (original) intuition, which reveals under scrutiny more than we first observed in it."[1] It can hardly be too much emphasized that Descartes was a strongly religious man, and much of the difficulty of his "natural theology" arises from his attempt to convey the immediacies of the religious life in the form of logical arguments. What appears as a process from point to point really represents a deepening appreciation of the inseparability of the self from God.

However this may be, the theory of the divine guarantee enables Descartes to solve the most pressing antinomy of the times, as reflected in his own divided interests: that which arose from the conflicting claims of religion and science. Descartes has succeeded in maintaining the supremacy of God and at the same time handing over to the physicist a charter of complete independence in his own delegated sphere. The theory does not mean that God makes true what once was not true: it means that what is true, and was always true, is in fact true because there is, and always was, a God. It is wholly true, but only because of a truth more fundamental on which the whole principle of truth depends. Thus the scientist can exercise his privilege and drive the philosopher out of science, but only because he has a philosophical credential to do so. The philosopher, on the other hand, standing by the ultimate religious verities, admits and insists upon the independence of science, but maintains that he alone is in a position to bestow it.

In a rational universe such as our universe has now been proved to be, it follows that that which can be conceived apart from other things is essentially distinct from them. Now the self can be conceived without any reference to the extended world: therefore it is essentially distinct from the extended world. On the other hand, the extended world can be clearly conceived in isolation from the human spirit: therefore it is essentially distinct from the human spirit.

This rigorous dualism is essential to a proper adjustment of the respective claims of science and religion. If Descartes is to justify the new mechanistic physics against the mediaeval philosophy of nature he must refuse to allow spiritual causation in nature. If he is to justify religion against the growing naturalism of his times, he must show that spirit is not subject to natural law, because it lives in a world, not of necessity, but of standards and aspirations. The dualism is, of course, subject to the overarching unity of God; but the two factors are in no sense dependent upon each other.

[1] This point is treated more fully in *The Philosophy of Descartes*, p, 321, from which these passages are quoted.

It is to be observed that the distinction is one of essence and not of fact, and does not involve the absurd conclusion that soul and body do not co-exist in the human being. The most it can mean is that their association is fortuitous, and is not implied in the nature of either. But even this moderate conclusion is hard to sustain in face of the facts of emotion and sense-perception. These are phenomena involving a mutual impact of mind and body: and if they are classed as aspects of spirit (which is how Descartes does class them), then it is part of the essence of spirit to contain elements depending on the co-operation of the body: and this is contrary to the hypothesis of essential separation. Descartes is so much impressed by these considerations that he sometimes seems to treat the human being as a new sort of quasi-substance, body-mind, or mind-body: and on this basis he founds his account of sense-perception. This is a tribute to his sense of fact (always a matter to be reckoned with in Descartes) rather than to his consistency. On the other hand, in his account of the "animal-machine," and in certain isolated concessions to Occasionalism, consistency prevails. In any case, in view of the importance of his dualism to his philosophy as a whole, it indicates a deep-seated defect that he is unable to maintain it without either compromise or blindness.

Descartes is sometimes alluded to as the father of Idealism: and we may conclude this cursory review by inquiring in what sense (if any) he deserves the title. There are two senses in which its use is plausible; and they are both associated with the method of doubt. In the first place, Descartes holds the representative theory of perception: and it is on the gap between the idea which represents and the reality which is represented that the first attack of methodical doubt is concentrated. As the existence of the idea *qua* idea is undeniable, while it is at least possible to think away the object, then, as long as metaphysical certainty is lacking, we can know nothing but ideas. But Descartes's whole philosophy is one long struggle for metaphysical certainty, and the real question therefore is whether, when it has been achieved, his Idealism is overthrown together with the doubts which give rise to it. Descartes's usual reply is that to attain certainty we must leave the senses behind us, and that perception can never be anything but indirect. He comes to be assured that there is a real material world, "the existence of which was never doubted by any sensible person," but what we have in perception is merely a selected appearance adapted to our practical needs. Thus, though Descartes is not an idealist in the sense of believing that the real world is ideal, he is an idealist in his theory of perception: and his view was to have important consequences in the hands of successors who held that the senses are the only gateway to knowledge.

In the second place, in allowing himself to doubt the truth of clear and distinct ideas, Descartes drives another wedge between idea and reality: and as long as the discrepancy remains, no knowledge, even the most scientific, can be more than ideal. As before, the question is what happens when idea and reality are reconciled. The answer is that some knowledge, including the abstract knowledge of logic and mathematics, is ontologically certificated, but does not thereby become knowledge of the real: that other knowledge, namely knowledge of nature as conceived by the physicist, is of extension which really exists, but is mediated through the former kind of knowledge which is ideal: and that the supreme knowledge, knowledge of the self and of God, is knowledge of the real without any qualification whatever. How far this constitutes Idealism may be left to the private judgment of individuals, and will depend on the sense they assign to their terms. But as any Idealist tendencies it contains are ultimately subject to a theistic realism, it is perhaps best to say that the true bent of Descartes's philosophy is not Idealist, though it embodies Idealist trends whose historical significance is greater than their importance in their original context.

If we ask, in the phrase made familiar by Croce, what is living and what is dead in the philosophy of Descartes, we shall find that there is much to discard, including structurally central positions essential to a synthesis of contemporary culture. His dualism died early, and the distinction of soul and body, which he affirmed so stoutly against the quasi-behaviourism of Aristotle, is now, even in most reasonable forms, somewhat outmoded. His views on perception, though not wholly abandoned, are regarded in the most advanced quarters as an obstacle to progress. His theory of the logic of science, though it has recently had a St. Martin's Summer revival, has never really recovered from the criticism of Kant. For these and other alleged philosophical crimes, he has been branded by Professor Hoernlé as "the father of all evil in modern philosophy."[1] But it will perhaps repay us better to dwell on what is living, and it may then appear that the aberrations are the complement of the triumphs. In any case, it is well to remember that doctrines of great philosophers which seem to be dead are often only sleeping until other philosophers see good to revive them.

The permanent contributions of Descartes to philosophy, that is to say, those which have been, and still are, continuously fruitful, may be concentrated under three headings.

(1) Descartes was the first philosopher of any age to put the conception of personality at the centre of his system. Greek philosophy was so exclusively outward-looking that it did not pause to

[1] *Studies in Contemporary Metaphysics*, p. 241.

contemplate the process of contemplation; and it thus omitted from its explanation of things that which most of all needed explaining, namely, the fact that there *is* explaining. The philosophy of the Middle Ages, while enhancing the importance of the human soul, and thus making possible the personalist philosophies of a later epoch, was in spirit traditional and anonymous, and continued to view souls in the Greek manner, from the outside. The spiritual self of the *cogito* is not simply an object, whether of contemplation or of moral duty, but a subject, only to be understood through the immediate experience of a subject. Henceforward, thanks to the new and inward conception of the person, he will always be a source of action as well as merely active. He will be distinguished from nature by the gift of freedom, or the capacity to choose and originate; and it is this one unescapable fact which has for ever made materialism impossible.

It is sometimes suggested that the new conception threw the shadow of humanity over all objects of knowledge, rendering the clear apprehension of nature difficult till our own time. This would be a tragically ironical result for a philosophy which set out to destroy the anthropomorphism of mediaeval science, but in so far as Descartes's conclusions have contributed to it, it is through other people's misunderstandings. As a matter of fact, the Cartesian conception of the person combines with the Cartesian conception of nature to abolish a conception of both person and nature in which each was misunderstood owing to the influence of the other: and the salient contrast, which was then first revealed, brought out for the first time the undramatic, unspiritual, and unhuman quality of nature as such.

Again, Descartes's discovery of the self is not simply the discovery of a principle of apprehension: and in this sense it is far removed from that intellectualist abstraction, the "transcendental unity of apperception." This is due to the admirable, and thoroughly French, concreteness of Descartes's approach to the issue. The self as he depicts it not merely knows, but *comes* to know through the positive exercise of freedom: it *refuses* to be satisfied with anything less than the indubitable. The self revealed in the moment of doubt is a moral and a thinking self at the same time: the occasion of its resistance is a threat to intellectual integrity, but the resistance itself is moral in its quality.

(2) It may seem strange to reckon Descartes's philosophical theology among his permanent contributions, and still stranger to award them a high contemporary significance. It is supposed to have been demolished by Kant in the Transcendental Dialectic (though, as a matter of fact, Kant's keenest shafts were meant for others, and leave him unscathed), and to be worthy of discreet oblivion. But Descartes really anticipates the modern theological

emphasis which came in with Kant's positive contribution to the subject in the *Critique of Practical Reason*. What Kant should have put an end to for all time was the purely intellectual conception of God. He may have been wrong in holding that the intellect has nothing to do with the apprehension of God, but he was surely right in affirming that a God whose attributes may be apprehended by philosophy alone has nothing in common with the God of religion. Now from Descartes's own position, though he certainly did not fully understand it, the same conclusion necessarily follows. God, for him, is not so much an object as the complement of the subject, and hence responsive not merely to apprehension, but to the subject as a whole. Challenged for a definition of what he meant by God, Descartes replied, "the greatest perfection which it is possible to conceive." Such a perfection can only be reflected in the *whole* life of man. It is true that Descartes essays proofs in the traditional manner, and to that extent Kant's criticism may apply to him. On the other hand, he avoids the still narrower error of Kant, who looked for evidence of God in the moral life alone. The conception of perfection covers every form of valuation: and the evidence of defect and aspiration establishes in each case the objectivity of the value.

It is on this point, the objectivity of value, that Descartes's conceptions are of modern interest. His argument "that the more cannot come from the less" may be ontologically false, but it is axiologically true. Moreover, the main consideration which he urges, that the self cannot be the source of the standards by reference to which alone it exists, is still the main contention of those who deny that value is merely a projection of the subject. Even the concentration of value in a supreme ontological entity, which is not fashionable in modern discussion, may eventually provide inspiration to those who, starting from other hypotheses, are perplexed by the participation of values in each other, and by the participation of the person in all. Indeed, if ever I were tempted to formulate a philosophy of religion based on recent inquiries into value, it is from Descartes that I should begin.

(3) Descartes, partly through his dualism, and partly by his subjection of scientific method to metaphysical verification, has bequeathed to his successors a clear sense, which they can ill afford to lose, of the difference, both of province and of method, between philosophy and science. Taken as a whole, Descartes's dualism is a stone of stumbling, but it does at least have the effect of precluding the unreasoning application of the categories of natural science to human behaviour. Descartes may be wrong in holding that extension cannot belong to the essence of a spiritual being. He is certainly right in holding that the essence of a spiritual being is not merely extension. Moreover, he has made it clear, by presenting the human

spirit as undergoing the temptations of the wicked genius, that one of its distinguishing qualities is a critical freedom. His conclusions on this head are confirmed by his doctrine of the divine guarantee, which implies that science receives a certificate of certainty from philosophy. It is a heartening precedent for such unrepentant believers in metaphysics as still exist, and are dismayed by the copious contemporary burning of sufficiently stale incense to "the idol of scientific method." After all, the great ages of philosophy are those in which she makes great claims for herself: and Descartes, himself a scientist of no mean distinction, who had helped, both by his theoretical revolution and by his practical discoveries, to deliver science from Aristotelean bondage, could admit and press them without prejudice and without embarrassment. His estimate is therefore of peculiar significance.

No account of Descartes can be complete without some reference to his position on the watershed between two epochs. His was a curious, eager, restless, essentially practical nature, with a contradictory passion for solitude and contemplation. Owing to his inner complexity, he was able to enter intimately into the diverse sympathies of his day. At times, absorbed in the prospect of the mastery of nature through science, he speaks with the breathless confidence of the coming age of progress. At others, he goes out of his way to stress the unimportance of environment, and preaches Seneca's doctrine of contentment in oneself almost in Seneca's words. As in his life, so in his intellectual emphasis, he alternated between two unreconciled tendencies, and never effected a satisfactory synthesis. He was mediaeval or intensely modern, Stoic or utilitarian, naïvely pious or radically sceptical, gazing raptly into eternity or peering greedily into the future, according to mood and circumstance. There is something of this shifting antinomical tendency in his philosophy: for example, the contrast between his trenchant dualism of mind and body, and his interactionist theory of perception. It is the result of a passion for clear outline combined with a scrupulous honesty in the facing of facts. A less vivid and less impatient mind might have halted before presenting its conclusions in their original sharpness. A less inquiring or a less balanced mind might have overlooked the difficulties which beset them. A less rigorous or a less honourable mind might have covered the retreat more skilfully, and confused the issue by a false pretence of consistency. Descartes was not of those thinkers who can cut a philosophy all of a piece. Perhaps this is part of his fascination and suggestiveness. If I may quote the saying of a beloved senior and former colleague, Descartes would not have been called "the father of modern philosophy," if he had not left so many problems behind him for his children.

MORALITY AND THE RETRIBUTIVE EMOTIONS

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JUST as the pleasant experience differs from the non-pleasant or unpleasant, and (according to many at least) the aesthetic from the non-aesthetic, internally or qualitatively, and not merely in degree, or externally or relationally, so, it is natural to expect, a moment of moral living differs from a moral or immoral moment. Indeed, from many quarters, and most emphatically from the Stoic and Christian, we have been wont to hear that if we but leave our sinful or indifferent lives and put on righteousness or goodness, we shall become new men or men reborn, even creatures of a different species. But according to many (perhaps most) analyses of morality these promises of transfiguration or translation are nonsensical lies: for the moral experience, as exhibited in these analyses, differs from the non-moral or immoral only in respect of external relations, or at the most in degree. Whether the truth resides in the promises or in the analyses is, obviously, a question of no mean import. It is also a vast one, while the time and space that can be given up to an article are brief; hence the following will be barely more than a raising of the question, or a provocation, by means of rough statements, some dogmatic, others hypothetical.

First, we must make clear beyond the possibility of misunderstanding what we mean by a merely external or relational difference, or difference in degree. The man, then, who, thinking that thus only can he assert his superiority or greatness, should kill another who had set himself against his whim, would differ only in degree, or only externally or relationally, from the man who, actuated by a similar thought, should revenge himself only with beneficence on one who had deeply wronged him.[1] Internally in both cases the state of mind would be the same: egocentric preoccupation with grandeur; the difference would lie merely in the relation to a different external expression or act. We might, no doubt, think that the idea of invariably responding with beneficence (but not as revenge or self-assertion) had originated, probably in some other man, from an impulse very different from the concernment with one's grandeur, and had subsequently, after disguise as an idea of grandeur-

[1] Seneca (quoted by Westermarck) says in *De ira*, II, 32: "The most contemptuous form of revenge is not to deem one's adversary worth taking vengeance upon."

realization, been foisted externally upon the grandeur-loving man; we might even think that since he has accepted it, there must be something in him restraining or diluting his lust for greatness, power, self-assertion, or revenge. But we should declare that his state differed from that of his counterpart, the killer, at the most in degree only. If the one state had to be called moral and the other immoral or non-moral we should say that morality, as something lived, differs only externally, or relationally, or at the most in degree, from non-morality or immorality.

Of the aforementioned disillusioning analyses those of Westermarck and McDougall are among the clearest and most uncompromising. According to Westermarck[1] there are two moral emotions: moral approval and disapproval or indignation. They belong both to the general class of retributive emotions, of which many are non-moral. The second, like anger and revenge (both non-moral), forms a subspecies of resentment; the first, like gratitude (non-moral), forms a subspecies of retributive kindly emotion.[2] All the moral concepts, viz. ought or duty, bad and wrong, right, injustice and justice, on the one hand, and goodness, virtue, merit, on the other, are based on, or originate from, the second and the first of these two emotions respectively.[3] The "qualities assigned to the subjects of moral judgments really are generalizations derived from" these emotions, "tendencies to feel one or the other of these emotions interpreted as qualities, as dynamic tendencies, in the phenomena which give rise to the emotion."[4] The morality Westermarck treats of is chiefly a social growth, and consists in the carrying out of a code of written or unwritten rules and in the practice of virtues. On the hypothesis that there may be some other morality also, or something which better deserves the name of morality, we shall call his kind "customary morality." Granting for the moment the truth of his analysis of it, the question to be asked here is whether he exhibits any qualitative or internal difference between the moment of moral living and the non-moral or immoral. I think he does not. Nor, indeed, does he claim to do so. He does claim, against McDougall, that the moral emotions are differentiated from the non-moral.[5] But what differentiates them? Only impartiality, including disinterestedness, which is a form of impartiality.[6] But this is only an external relational characteristic. The non-moral or immoral resentment which one man feels against one who has baffled his or his friend's non-moral or immoral will, and the moral resentment (i.e. such that any member of the community might tend to feel it) of another against someone who has wronged not himself or his friend but a stranger, are both resentment or "hos-

[1] *Ethical Relativity*, 1932. [2] *Ibid.*, p. 63. [3] *Ibid.*, Ch. V.
[4] *Ibid.*, p. 114. [5] *Ibid.*, p. 62. [6] *Ibid.*, pp. 89–93.

tility." They differ only as regards the external situations and the objects whereon they are directed. They may differ also in degree; but then, often, the moral "hostility" may be the more intense, the grimmer, and more terrible of the two. Furthermore, whether an internal or merely external characteristic, impartiality is not really a differentia of the moral emotions, for it can characterize also non-moral admiration or contempt (for the skilled or for the unskilled, for example). If Westermarck should urge that these are at any rate not "retributive" emotions he would overlook the almost ineradicable tendency in all of us to give to (i.e. to reward) him that hath and to take away from (or to mulct) him that hath not, a tendency which, in his own language at least, we should have to describe as arising from the pleasure or displeasure caused in us and as therefore retributive. He might urge that, unlike the moral emotions, such admiration or contempt is not directed towards the will, person, or character. And, indeed, it is in their direction that we should have expected him to look for the differentia of the moral emotions: such a direction, constituting personal relationship, might, although itself a relational characteristic, differentiate the *relatum* internally. But he himself specially insists that it belongs also to non-moral retribution.[1] Besides, it does not go deep enough so as to constitute a qualitatively or internally specific personal relationship. Customary moral judgment, although it makes, as he points out,[2] a great ado about intention, motive, will, character, is concerned with a person only *qua* executor of the code of general rules or practitioner of one or other of the received virtues in its generic aspect. These, the general rule or the generic virtue, and not the person in his personality or individuality, are at bottom its subjects. Westermarck emphasizes the necessity to customary morality of computation by general rules,[3] and describes the moral judgment as referring its subject to a class, as "labelling the act according to certain obvious characteristics which it presents in common with others belonging to the same group."[4] Now, a person can be computed, classified, or labelled only in respect of some generic attribute, and not in respect of his individuality; it is the attribute, and not he, that is morally judged. It is, of course, true and very important that, as Westermarck insists,[5] retributive hostility and kindliness cannot make any distinction or separation between the attribute and the person: they identify the one with the other (so long as we do hate, we cannot hate the sin without hating the sinner); but this means, not that they are essentially directed, as he maintains, upon persons, but that they preclude personal relationship and the appreciation of personality. Com-

[1] *Ethical Relativity*, p. 172. [2] *Ibid.*, Ch. VI.
[3] *Ibid.*, p. 231. [4] *Ibid.*, pp. 114, 115. [5] *Ibid.*, p. 85.

firmatory of this, there stands, in spite of all his attempts to explain it away,[1] the glaring fact that judgments indistinguishable from the moral, and often taken as moral, are frequently passed in connection with matters which by no stretch of the imagination can be said to refer to the will—and that too, not only in the undeveloped societies which he chiefly considers, but in our own: Try as we will, it is impossible to find an internal or qualitative difference, or even one which is not merely of names, rites, and ceremonial, between the attitude to another, or for that matter, to oneself—call it condemnation, or resentment, or hostility, or disfavour, or exclusion, or what you will—for not having been born into the right class or heir to sufficient money, or for ignorantly not wearing the right clothes or committing a social *faux pas* or being aitchless or even, at one time, for not mispronouncing Latin in the English way, and the attitude to another or oneself for having wilfully committed murder or robbery or perjury. The truth—a most important one, and for that reason here dwelt upon at some length—is that between the judge upon the bench of customary morality and the prisoner at its bar the relation is, in more senses than the obvious one, impersonal.

I am convinced, then, by Westermarck's analysis that, as regards the morality he treats of, there is no qualitative or internal difference between the moral moment and the non-moral or immoral. A difference, of course, there is, but it lies entirely in the external acts done or favoured and the external objects pursued or approved. I have called the morality in question "customary," but this term may conveniently be used to cover all morality which, whether customary or not, consists, like customary morality, in the execution of a code of rules or programme of measures and in the practice of virtues, and consequently pronounces judgments which are impersonal in the sense that they do not touch personality or individuality. I am further convinced that, with Westermarck, we must place such morality in the region of retribution. It is with his idea of the nature of retribution that I differ. Does retribution always and necessarily involve "self-feeling" or the "self-regarding sentiment" or not? That is the question.

First a minor point, chiefly of terminology, must be disposed of. Wherever, in order to refer to Westermarck, I speak of returning pleasure for pleasure and pain for pain (he also uses "benefit" synonymously for the one, and "harm," "loss," "injury," "suffering," for the other), I use "pleasure" and "pain" as respectively brachylogies for "liked" and "disliked" processes, physical or psychical or psycho-physical, for I do not think that the consideration of abstract pleasure and pain, except in comparatively rare cases,

[1] *Ethical Relativity*, pp. 162 ff.

influences conduct or enters into our deliberation about conduct.[1] The concernment with processes for their own sake or as ends it will be convenient to refer to as "biological."

I accept from Westermarck, as a legitimate technical adaptation, "resentment" (tending to issue into hostile retribution) for that genus of which anger and revenge are species, and I emphatically agree with him that "it is impossible to draw any distinct limit between these two types of resentment."[2] But he uses "resentment" for any reaction to inflicted pain (disliked process) as such, even apart from self-feeling, and it is from this reaction that he wishes to derive moral disapproval. Herein, I maintain, he departs both from ordinary language and from fact. The reaction in question would more appropriately be called "vexation" or "annoyance," and it leads primarily to shunning the nuisance, and to paining or destroying only in self-defence or as a removing or preventive or deterrent measure, which is, of course, not retribution proper. The latter, the retaliation with pain as an end in itself (though this, we shall see, is not quite an adequate description), inspired by resentment, angry or vengeful, and in response, as we shall maintain, not to inflicted pain as such but to inflicted pain, if at all, only when taken for something else, comes only with the emergence of at least incohate self-feeling. Moral disapproval, since it is a form of resentment, while resentment is impossible without self-feeling, is, therefore, a manifestation of self-feeling.[3] But the latter, or the "self-regarding sentiment," is in many persons very undeveloped or inactive,[4] and it is significant that, just as they are not much given to anger and revenge, so they have little use for the moral concepts in general and for moral disapproval in particular: they admit that they refrain from lying or adultery or stealing because they *dislike* them—that is, their reaction even to these is mere annoyance and not resentment or moral disapproval. Such a one—and he would be of their class even though he were utterly beneficent instead of being a scamp—is Tito Melema in George Eliot's *Romola*, who, almost completely devoid of the self-regarding sentiment, is bewildered by moral disapproval as by revenge, both equally incomprehensible phenomena to him, and whose nearest approach to anger is "a cold dislike." On the other hand, observation of life teaches us

[1] My use is, I believe, actually that of a good many so-called hedonists. If I differ at all from Westermarck (see *Ethical Relativity*, pp. 259–61), the difference is not material to the argument.

[2] *Ibid.*, p. 69.

[3] For the present purpose self-feeling may be understood as that which develops into the feeling of inferiority and superiority.

[4] In some anger, though not in revenge, it may be little developed. Such anger is very like mere annoyance and leads to the phenomena the consideration of which induces Westermarck to use "resentment" for the reaction to inflicted pain as such.

that the people most inspired by self-feeling are both most susceptible to anger and revenge and also most apt to be moralists, while moralists are particularly liable both to the self-regarding sentiment and to anger and revenge. Such observation is most happily "coadunated" by Plato in his term τὸ θυμοειδὲς,[1] which may be translated by "the self-regarding sentiment," "the irascible principle," "the principle of moral disapproval," or "the moral policeman principle." Westermarck himself, although he covers them both by the same name, "resentment," and although he does not distinguish between being pained and being offended,[2] seems to feel that there is a gap between the protective reaction against inflicted pain as such (compared by him to "protective reflex action") and retaliation with pain as such or as an end in itself. He makes intelligence bridge the gap: "But," he says, "as a successful attack is necessarily accompanied with such [the enemy's] suffering, the desire to produce it naturally became, with the increase of intelligence, an important factor in resentment. And when pain was distinguished as a normal effect of resentment, the infliction of it could also be aimed at as an end in itself."[3] But if that is all, this, surely, is a veritable *pons asinorum* for "intelligence" to make.[4] The fact is that the two reactions are different in kind, and that the one is not a development of the other. Self-feeling is the differentiator. Indeed, he himself, in the next sentence, goes on to say: "Resentment is particularly[5] apt to assume this character under the influence of self-feeling of the injured party, as a means of humiliating the offender."

The rôle of self-feeling in resentment can best be studied in the latter's most palpable form, revenge. To say that the vengeful man desires the infliction upon his enemy of pain as an end in itself is to preserve one important truth—namely, that for him the act of retribution is an end in itself and aims neither at the cure nor deterrence of the offender nor at anything else. But to think that the infliction of *pain* as an end in itself is the meaning of that act is to be misled by one of those many philosophic abstractions which do away with all real problems and raise false ones in their stead because they obliterate the vital distinctions which are carefully marked by common speech. The latter tells us that the vengeful man desires, not to pain or hurt his enemy, but to "be even with him," or, better still, to "bring him to the dust," to "humiliate" him, "lower," "bring down," "diminish" him, to reduce him to everlasting subjection or submission. All these phrases, we find,

[1] *The Republic.* [2] *Ethical Relativity*, p. 72.

[3] *Ibid.*, p. 69; cf. p. 83.

[4] Nascent intelligence is supposed to distinguish, growing intelligence to confuse, means and end. [5] "Exclusively," according to me.

describe, not a biological concernment, a concernment with any process or quality of process (pain),[1] with any doing or suffering on the part of any one, but a concernment with *position* ("even," "low," "lower," "down," "under").[2] In so far as any pains or processes enter into the question, they do so because they are taken to stand for, or to symbolize, position, the redress of the balance of power or the return of the *status quo*. The symbols of retaliation are strangely diverse from circle to circle: the infliction on the offender of physical or mental suffering or of death, rebuke or admonition, giving him a certain look, extorting an apology from him, exchanging pistol shots with him, even "heaping coals of fire upon his head." A study of them leads to the conclusion that though the notion of position comes from revenge itself (from the self-regarding sentiment or the concernment with superiority and inferiority), the denotation of that concept is determined by other factors in human nature. As its *terminus ad quem*, so is its *terminus a quo*: revenge is caused, not by pain as such, but by whatever is taken to stand for affront or insult or humiliation or lowering, or violation or diminution of one's position, for an attack upon self-feeling. Here, too, the symbols are very diverse and are determined not by the individual's self-feeling but by his whole history and that of his circle.

The apparent desire to retaliate with the infliction of pain as such, which Westermarck takes to be revenge, can only be understood in the light of the less specific apparent desire to inflict pain as such without any provocation whatsoever, or to have others suffer, whether at our hands or not. This sadism or malice, in its turn, remains an opaque phenomenon until it is seen to be also a manifestation of self-feeling. Such a manifestation it indeed is: the suffering or loss or misfortune or other state of others delights us only because it is taken as a lowering of their position and consequently a comparative heightening of ours (where the suffering is taken for elevation of rank we do not desire it for them). Self-feeling contains an ambiguous impulse, satisfiable alike in destruction and in construction—for we may be higher than others alike by their falling as by our rising—but more tempted by destruction, which is easier while construction always meets with difficulties

[1] To say that the vengeful man desires to inflict the pain of humiliation is merely to flee from the real problem to words. For "humiliation" is the defining term of the phrase and is therefore the term to be defined.

[2] It is impossible to exaggerate the importance for Ethics of the fact, most often neglected, that there are desires, both moral and non-moral, not only for pleasure, processes, experiences or states of mind, but also for position, form, structure, relations; and that position, etc., can no more be reduced to process (or pleasure or experience) than a square can be described as an event.

which, until at any rate they are overcome, are always humiliating. The ambiguity, especially in favour of construction, is never resolved by our own self-feeling, but partly by the thrust upon us of the self-feeling of others, partly by other impulses in them and in ourselves. These, especially in a settled society, set strict limits to the destructive manifestation, limits generally observed until there occurs a disturbance to the position which, at least in the overt and effective part of our life, we have had to accept. The disturbance may arise from the chance highering of others or the chance lowering of ourselves, or from the wilful aggression of others against ourselves. In any case it provokes the impulse to self-assertion or self-vindication or self-exaltation in its primordial ambiguity and indiscriminateness; we then desire our own elevation over *any* others in *any* way and whether by our own efforts or others' or by chance. This explains why, when our spite, envy, or jealousy, or revenge are aroused, *anyone* who comes in our way is liable to fall victim to it. It explains why revenge, as McDougall maintains along with Steinmetz,[1] is originally undirected: not only the Malay *amok* but also civilized Europeans are apt, according to common speech, to "revenge" themselves upon *anyone* instead of, or even in addition to, the offender. It explains, further, why revenge can be constructive as well as destructive: in spite of what Westermarck says,[2] a man severely criticized for having written a bad book and thus wounded in his self-feeling might very well "consider the writing of a better book to be an act of revenge." It explains, lastly, such common expressions as "he was avenged by others," or "by the turn of events." Ambiguity and indiscriminateness are inherent in self-feeling; it is not they that need explaining but rather such determinateness and discrimination as it presents. These are formed by the limits imposed by others' self-feeling or other impulses in them or in us, for even when disturbed in our position we still observe limits and do not simply strive for unlicensed omnipotence: such a limit is, for example, the normal relevance of revenge, its direction upon the aggressor only.

In desiring to explain revenge I have inevitably been led into giving a composite photograph of many manifestations of offended or obstructed self-feeling: spite, jealousy, envy, anger, revenge. This is because it is impossible to draw any distinct limit between them, since they are differentiated, not internally or qualitatively, but only externally (e.g. by the external occasion or situation), so that the more self-feeling predominates in a man's nature the more they are apt all to resemble the most extreme of them, revenge. In this they are resembled by other manifestations which have not been mentioned above but which are also concernments with one's

[1] *Social Psychology* (21st. ed.), pp. 121–122. [2] *Op. cit.*, p. 67.

own superiority and others' inferiority: scorn and contempt. All may be said to be species of the negative reaction of self-feeling or of the reaction of offended or obstructed self-feeling. This reaction may be called resentment or the affective-conative aspect of disvaluing or negative valuing. Revenge is the extremest form of resentment.

Moral resentment or disapproval is a species of resentment or of negative valuing. As we have seen, it is not differentiated from the other species by its reference to the will. The only differentia there remains is impartiality, an external one and one which, since the moral reference to the will is unimportant, will make us include in the species "moral disapproval" all impartial contempt for any attribute. The impartiality may be said to consist in the fact that the offence is not simply to the self-regarding sentiment of the particular individual as such but to that sentiment in so far as the individual identifies himself with a system of definable and therefore generic positions (rights) or functions. (The system may be regarded as society, or as in Heaven, or as the Moral Law, or as the Kingdom of Values.) The impartial man regards himself and others simply as the incumbents of such positions or mandataries of such functions. He resents, disapproves, blames, or condemns whatever stands for an affront or violation to any position or function, whether his or others', and thus for belittlement or diminution or lowering of the *supremacy* of the whole system; he despises or scorns or disvalues (excludes) whatever comes outside or short of the system. The meaning of retributive action (punishment) is simply in the restoration or assertion of that supremacy or in the declaration or exclusion of the low or the outsider as low or outsider, but the form such assertion or declaration or exclusion takes (admonition, degrading, banishment, fining, imprisonment, flogging, death) and the other purposes it subserves (deterrence or reformation) are determined by other impulses than the retributive.[1] Apart then from the external characteristic of impartiality, we meet here the same concernment with position as we have already reviewed. Nor is there any disinterestedness except in so far as this is synonymous with impartiality. Disinterestedness in the sense of freedom from one's self there is not. For the disapprover has identified himself with the system and an offence to it is an offence to his own self-feeling. *Mutatis mutandis* we may extend to him the quotation about Australian savages given by Westermarck:[2] "Strike the gens [system] anywhere, and every member of it considers himself struck." Hence the intensity of the impartial resentment varies in direct proportion to the reality which the identification has for the imagination: consider, for

[1] Above all, reformation is not the aim of moral indignation or resentment. The ideal of the latter is a Hell of the eternally damned to act as a foil to the Heaven of the elect.

[2] *Op. cit.*, pp. 104–105.

example, the difference in our resentment of a wrong to "Humanity," to China, to our country, to our class, or of a violation of Christian ethics, of a code fought for by our ancestors, and of a code invented and championed by ourselves.

Whatever has here been said about resentment and moral disapproval applies, *mutatis mutandis*, to their contraries, which, therefore, need be treated only briefly. The term "retributive kindly emotion," chosen by Westermarck for the contrary of resentment, like his detailed description, does not differentiate this fundamentally from the altruistic sentiment or from sympathy, although it is fundamentally different from them, being a concernment with position, whereas they are concernments with pleasure (process). It is the positive or expansive reaction of gratified self-feeling; we might call it "positive valuing" simply, were it not that this term implies impartiality; we will call it "acclamation." Acclamation is not for the pleasure-giving as such but for whatever is interpreted as high, or elevating or exalting, and the aim of its active expression (e.g. of honouring) is not to give pleasure as such or to confer benefit—we honour largely, or chiefly, the dead—but to express or declare height, elevation, exaltation, although, as in the case of their contraries, the strangely variable denotation of these notions and consequently the active expressions are determined by other impulses than our own self-feeling. The aim is, above all, to identify ourselves with the acclaimed by finding either the latter in ourselves or ourselves in him or it: ultimately, as many wise men have pointed out, it is always ourselves we magnify, extol, praise, worship, etc. Contrary to the proverb, the prophet finds honour most easily in his own country, provided he magnifies what is already there magnified, since his countrymen in honouring him honour themselves; even into the awe-inspiring mountain we project ourselves, according to the Empathy theory, and the sublime in Literature, Longinus says, fills the reader's soul with exultation, vaunting, and pride as though he were the author.[1]

Discounting, for the reasons already given, reference to the will, we must reckon as "moral approval" all impartial positive valuing (worshipping, venerating, respecting, honouring, prizing, praising, esteeming, etc.). "Impartial," as has already been explained, means "generic." Impartial approval is the inclusion of something or someone regarded generically in a system of generic positions or functions; it is an exaltation of that system. Disinterested it is not: ultimately it is ourselves, identified with the system, that we approve.[2]

Beginning with Westermarck, I end with McDougall. For the soul

[1] *On the Sublime*, VII.

[2] Even in self-condemnation, wherein we approve our "higher self" and are proud because the condemnation, after all, comes from our own self.

of what I have in an extended sense called "customary morality," I make out to be self-feeling or the self-regarding sentiment. And so, apparently, does McDougall. At any rate he tells us that "moral advance consists, not in the coming into play of factors of a new order, . . . the moral instinct or conscience, but in the development of the self-regarding sentiment and in the improvement and refinement of the 'gallery' before which we display ourselves . . . until the 'gallery' becomes, . . . in the last resort, one's own critical self standing as the representative of such spectators."[1] No stronger expression than this could be given to the contention that between the moral moment and the non-moral or immoral the difference is not qualitative or internal. As against the analysis here favoured Westermarck's would have resentment and its contrary, and therefore the moral impulse, biological concernments with pleasure and pain (or processes); and he explains them genetically as derivatives from the impulse to living or survival, which are favoured by natural selection.[2] If genetic explanation there must be, one could point even to the repelling, excluding, or destructive activity of the electron as analogous to resentment, and thus proceed to derivation. Whether the survival function is really primary in resentment or in any other manifestation of self-feeling may, however, be doubted: of all their impulses, anger or its analogue in animals most often makes them deviate from the path of survival, while only something analogous to vanity (a form of self-feeling) can explain in them so many features which do not make for survival or even militate against it. But not everything need be explained by Natural Selection, for she has long ago been exposed as a careless judge. To understand resentment and its contrary, we must explain, not the impulse to living, not processes or pleasure and pain, but self-feeling and "position." The explanation of these two will also explain customary morality, in which "good" and "bad," "right" and "good," terms used for so many things, connote, briefly, "position-making." It is a thorny and intriguing explanation which cannot be even indicated here[3] except by the remark that perhaps greater light is thrown on the subject by Adler's treatment of neuroticism than by most treatises on Ethics or values.

If customary morality (in the extended sense here given) is the only morality, then we must conclude that the moral moment is, qualitatively or internally, not at all different from the non-moral or immoral. This conclusion will be paradoxical to those who have taken seriously what I have referred to as the promises of transfiguration or translation.

[1] *Op. cit.*, pp. 213–221. [2] *Ethical Relativity*, pp. 68–69, 95 ff.

[3] I have attempted it in a forthcoming book, *The Ethics of Power* (Allen & Unwin).

There may, however, be another morality, one which does not consist in the carrying out of a code or programme or in the practice of virtues but in full and free communication and appreciation between persons in their individuality, one wherein the moral concernment is neither with process as such nor with position but with meaning articulated in a situation free from reference to self. In such a morality the moral moment, the "enjoyment"[1] of such meaning, would differ qualitatively or internally from the non-moral or immoral; at any rate it would so differ both from biological concernment and from the concernment of self-feeling. But such a morality, having no room for self-feeling, will have no room for "values," for any praise or blame, approval or disapproval. This will certainly sound paradoxical to many. These will maintain (indeed they do maintain) that if such a life is conceivable and possible, it ought not to be called "moral" but "supra-moral," "beyond good and evil," "mystical," "religious," or "of grace." The issue thus raised might be a mere logomachy: what is important to decide is whether such a life is that which should be preached and practised. If we decide in the affirmative we shall call it "moral", on the ground that this term can only be of use to denote the life which should be lived; to customary morality, on the other hand, we shall refuse the title "moral," on the ground that, as something "lived" or "enjoyed" by the agent, it is not materially different from what, even in the language of customary morality, is called "not moral." We shall not need to show that this real morality has ever been lived by anyone, for we have long since learnt that morality is something preached rather than practised. None the less, it will be possible to show that, as regards at least its content, and even as far as the mitigation, though not the transformation, of its temper, customary morality has been not a little influenced by it.[2]

[1] The word is used in Professor Alexander's sense.

[2] I have so worded the article as to avoid the question whether approval or disapproval is a judgment or merely an emotion or sentiment, for the simple reason that for my purpose I needed to examine only the affective-conative aspects of these attitudes, aspects which, most people agree, are essential to them. I have also avoided the question of objectivity and universality. But I have indicated that the denotation of "good" and "bad," "right" and "wrong" (i.e. "high" and "low," or in general, "position-making") in customary morality is strangely variable: the only possible account of it is a historical one, such as none has better given than Westermarck.

THE PHYSICAL WORLD AND REALITY

JOEL GOMBOROW, B.Sc.

In his masterly article, "Sir Arthur Eddington and the Physical World," which appeared in the January 1934 issue of *Philosophy*, Dr. Stace has brought out a number of interesting points on which I should like to comment. However, as the main issues between Professor Stace and Professor Eddington are with regard to the physical world and reality, these will form the main topics of my remarks.

My first objection is against the "bifurcation of nature" into a "familiar world" and a "physical world." It is true that the phenomena of nature are so exceedingly numerous that no one can manage to study them all, at least not properly. Our studies of nature are therefore subdivided for convenience into physics, chemistry, botany, zoology, psychology, etc. As each of these sciences expands, it is in turn subdivided into various branches; and in practical life most men devote themselves to some narrow specialty for the purpose of earning a livelihood, while their knowledge of other parts of their own science in time becomes rather superficial. Are we going on that account to subdivide nature into a physical world, a chemical world, etc.?

In other words, granted that "the physical world has no colour or smell or taste," does that necessarily mean that it forms an entirely different world? May it not be merely a different part of the same world? As I look at the tree outside my window, the leaves look green to me. My physicist friend informs me that on a spectrum, green corresponds to about 600 million million electromagnetic cycles per second. Does that make the green colour an illusion? Cannot the green colour and the electromagnetic cycles be independent facts of equal standing in the same world? That the one fact is familiar and the other is not may be due merely to the circumstance that the one is observable with scarcely an effort, while a knowledge of the other involves the use of special apparatus and a good deal of theoretical reasoning and calculations. My botanist friend tells me that the leaves are not green in themselves, but that the green colour is due to a substance called chlorophyll contained in them. Well and good, he certainly knows much more about leaves than I do. But he is not claiming that the leaves he knows and the leaves I know belong to radically different worlds. It is simply that he knows more facts about that part of the world than I do.

A good many of the statements with regard to the physical world given out by Sir Arthur Eddington from time to time can be traced in his famous book *The Nature of the Physical World.* In the Introduction to that book, he tells us that he is writing simultaneously at two different tables, one of them a *familiar* table which is quite substantial, and the other a *scientific* table which is mostly emptiness. As to the meaning of "substantial," he tells us merely "I do not think substantiality can be described better than by saying that it is the kind of nature exemplified by an ordinary table." I am afraid this is hardly sufficiently illuminating to serve as a guide for picking other members of the familiar world. I can readily extend the idea to the other furniture in the room, and to include my books, my stationery, the walls and the floors of the room. But what about the water we drink and the air we breathe? I cannot admit any "instinctive tightening of the fingers" (*The Nature of the Physical World,* p. 274) in thinking of them. Are they on that account to be excluded from the familiar world? But we cannot possibly afford to do that, as we simply cannot manage without them.

As to the extreme emptiness of the scientific table, I have some mental reservations. My impression is that it contains some 30×10^{21} atoms (or some such number) to the cubic centimetre, which I should consider a reasonably dense population. Considering the great force of cohesion between the atoms which makes them so clannish, Sir Arthur is certainly justified in saying that "the chance of my scientific elbow going through my scientific table is so excessively small that it can be neglected in practical life." Matters are further helped out by the fact that in the emptiness of the table "are numerous electric charges rushing about with great speed." That their combined bulk is exceedingly small need not bother us in the slightest. An unauthorized party entering a bank in the stillness of the night may consider the premises entirely deserted; but before he has proceeded far with his business he may find himself in the clutches of the watchman. The bulk of the latter may be very small in comparison with the size of the bank; but, if he is rushing about with sufficient speed, the bank may be considered to be full of him.

Sir Arthur continues further: "There is nothing *substantial* about my second table. It is nearly all empty space—space pervaded, it is true, by fields of force, but those are assigned to the category of 'influences,' not of 'things.' Even in the minute part which is not empty we must not transfer the old notion of substance. . . . The whole trend of modern scientific views is to break down the separate categories of 'things,' 'influences,' 'forms,' etc., and to substitute a common background of all experience. Whether we are studying a material object, a magnetic field, a geometrical figure, or a

duration of time, our scientific information is summed up in measures; . . ."

It seems to me that in this excerpt we have a glimpse of Sir Arthur's philosophy as laid out at length in his *The Nature of the Physical World*. That "common background of all experience" is an external inscrutable world, and the "things" referred to are Kant's "things in themselves." It is these "things in themselves" that compose the world of *reality*, but they are absolutely unobservable and indescribable. They are a sort of disembodied spirits. If we ascribe to them colour, hardness, smoothness, and so on, these are merely idiosyncrasies of ours, or, as Dr. Stace says, "illusions and subjective interpretations." Not that we are altogether to blame, because these disembodied spirits seem to have some important messages to convey to us and are for ever signalling to us, but our minds are not the proper code book to translate these messages correctly.

The trained scientist, however, is not to be deceived. He is no more in possession of the correct code book than we ordinary mortals are, but he can discern certain features about the signals which he is quite capable of handling. "An elephant slides down a grassy hillside. . . ." This doesn't fool him in the slightest. He understands perfectly well that the elephant is no elephant, and that the hillside is no hillside, and that the supposed event is merely a figment of our imagination. "The mass of the elephant is two tons." Now, this is business. A mass of two tons is a pointer reading on some weighing machine, something with which the scientist has extensive experience and in which he has great confidence. Similarly, the bulkiness of the elephant is to be replaced by a series of readings of a pair of callipers, and his greyish black appearance by the readings of a photometer for various wave-lengths of light (*The Nature of the Physical World*, pp. 251–54). By the time the scientist has completely reduced the elephant to "a bundle of pointer readings," he feels that he knows all that is humanly possible to know about the *real* elephant or his counterpart in the "physical world." If somebody else is telling other stories about the "elephant," he is talking about an elephant in the "familiar world," the world of misinterpreted signals, which the scientist, as scientist, regards but lightly.

An immense amount of work on how to obtain reliable pointer readings of length, mass, time, force, position, velocity, acceleration, momentum, stress, energy, wave-lengths, and the like, and how to relate these to each other, has been done by Newton, Euler, Lagrange, Laplace, Legendre, Hamilton, Jacobi, Maxwell, Mach, and many others. The engineering profession has turned a good deal of this work to good account in the familiar world; but most of it, however, remained in the physical world, and has, if I may be pardoned the expression, an odour of musty mathematics. In any case, the

novelty has largely worn off. Some people may still delight in it, but the bulk of humanity finds a world of pointer readings rather dreary.

In the last half-century, however, a number of events happened to liven things up. Electricity in the form of positive and negative charges on solid bodies has been known for centuries. Faraday passed electric currents through solutions, and found these solutions to consist largely of oppositely electrified atoms or groups of atoms, known as ions. But it was the Crookes tube in 1879 that gave us for the first time electric particles all by themselves. Just fancy, electricity in pure culture, unemcumbered by any matter whatever! These particles of pure negative electricity became known as electrons, and their principal practical use before the advent of radio was that of generating X-rays. There are also the positive Goldstein rays, but they may be regarded as chemical atoms. These negative and positive "rays," which were at first produced artificially, were found afterwards to occur in nature in radio-active materials with their α, β, and γ rays.

With the turn of the century, Max Planck, as a result of his thermodynamic studies on "black bodies," propounded the revolutionary idea that radiation energy did not come in a continuous stream but in neat packets, the amount of energy in each packet being proportional to the frequency (cycles per second) of the particular radiation. Applying this idea to Rutherford's model of the atom, Niels Bohr, followed closely by A. Sommerfeld and scores of other ingenious experimenters and mathematicians, gave us a model of the atom consisting of a positive nucleus surrounded at various distances by negative electrons. The nucleus is supposed to consist of a number of positive charges, called protons, equal to the atomic weight of the element in question; but some of these protons are neutralized by electrons in the nucleus itself, while the balance is neutralized by "planetary" electrons. The latter revolve about the nucleus in various orbits, each electron at the same time spinning about its axis. The entire system broadly imitates our solar system.

Among Bohr's principal triumphs was the deduction of a rational formula equivalent to Balmer's empirical formula for the spectrum of hydrogen, and with this formula he and his associates explained and even predicted other spectra and parts of spectra. In the early twenties of the present century, a crisis was reached when the refinements of practical spectroscopy outran the available theory and could no longer be covered by it. Very soon, however, the mathematicians caught up with the situation, and for the last few years it was a neck-and-neck race between the experimenters and the theoreticians, both sides being highly pleased.

Here, then, it is no longer a case of applying callipers to a phantom elephant in the familiar world and not having the slightest idea what "thing in itself" was the counterpart of it in *reality*. Here the callipers are applied to wave-lengths on a spectrum, and the measurements are overwhelmingly almost inconceivably fine. Wave-lengths are measured not only in Ångström units, an Ångström being 10^{-8} cm, but in minute fractions of an Ångström. On the other hand, the mathematician kept close pace, and by means of his protons, electrons, their orbits and sub-orbits, he can give a theoretical account not only for every wave-length but also for the intensity of every wave-length. He can even predict wave-lengths and intensities before, on account of faintness or other technical difficulties, they have been observed, thus rivalling the exploits of Adams and Lowell in predicting Neptune and Pluto.

To be sure, we are not in *Reality* yet, and the protons and electrons are still only signals from the "things in themselves." But the theoretician has an unconquerable feeling that now he has the signals correctly, and if he but follows them up he will before long arrive at the very portals of Reality. Should those portals be closed, he is ready to bring up sufficient battering-rams, either of the type used by Rutherford in shattering the nitrogen atom or in the form of scores of millions of volts, and force them; and then . . .

Of course, there still remains the question whether there is a Reality after all. Sir Arthur, old hand that he is with theories, shakes his head dubiously. Says he (*The Nature of the Physical World*, p. 282): "I am afraid of this word Reality, not connoting an ordinary definable characteristic of the things it is applied to, but used as though it were some kind of celestial halo." However, he is not going to doubt for an instant the existence of protons and electrons. Not only have they shown themselves in various ways, but it is possible to assign to them precise dimensions and weights. It is also possible to assign precise dimensions to the various orbits within an atom. Surely, non-existent things cannot have dimensions and weights.

All this, however, leaves Dr. Stace quite cold. He may admire and applaud the brilliancy of the work described above, but otherwise his equanimity is not seriously disturbed. Says he rather provocatively: "Now I do not believe that protons and electrons are real. I believe they are just what Sir Arthur says they are not, namely, fictitious or hypothetical entities, or, as I prefer to call them, mental constructions."

And so, the doctors disagree, and everybody is therefore at liberty to use his own wits as best he can. For my own part, not seeing my way to follow either of the great men, I was forced to formulate a theory of my own with regard to the external world and reality.

However, before laying it out here, I should like to comment some more on Dr. Stace's article.

Apparently in retaliation for Sir Arthur's making a mere halo of reality, he is attempting to make a halo also of existence. Says he:

"Sir Arthur says that the physical world has no colour, no sound, no taste, no smell. It has no spatiality. Probably it has not even number. We must not suppose that it is in any way like our world, or that we can understand it by attributing to it the characters of our world. Why not carry this progress to its logical conclusion? Why not give up the idea that it has even the character of 'existence' which our familiar world has? We have given up smell, colour, taste. We have given up even space and shape. We have given up number. Surely, after all that, mere existence is but a little thing to give up. No? Then is it that the idea of existence conveys 'a sort of halo'? I suspect so."

This sounds a bit strong. We have all learned in our elementary chemistry about "colourless, odourless, tasteless" gases, among which oxygen, the very breath of our nostrils, holds a prominent place. Do these gases have sound, spatiality, number? If not, are we going to refuse them existence? Or take the case of vitamins. Nobody has ever seen, heard, tasted, smelled, or touched a vitamin. We may even deny them spatiality and number without serious objection from anybody. But can we deny them existence? Think of the immense amount of work done *on* them in classifying them out into A, B, C, D, E, and G, and into subs. of these letters. Think of the immense amount of work done *by* them in preventing and curing various diseases, and even in promoting growth. The point I wish to make is that a thing may lack all the characteristics enumerated by Dr. Stace and still be very much in existence indeed. Some people went as far as denying existence to mind just because it lacks the characteristics of other human organs, so that Einstein must have used his legs in discovering relativity.

With regard to the old and the modern ways of explaining gravitation, it is certainly regrettable that some of our popularizers of science seem to take a sort of delight in mystifying their readers. To tell a man that the sun compels the earth to follow a curved path without exerting any force on it is to bewilder him, and the "humps and hills in space-time" as an explanation do not help much. Obviously, if it is on account of the sun that the earth deviates from the straight path it would have followed if the sun were not there, the sun must be doing *something* to the earth, and "exerting a force" seems to be as good an expression as any. The situation is simply that Newton's law of gravitation, like Coulomb's law of electrodynamics, is an "action at a distance" law, taking account only

of the terminal bodies and ignoring the intervening medium. Einstein's law, on the contrary, like the Faraday–Maxwell laws of electrodynamics, is a "field of force" law, expressible in differential equations involving space and time from point to point and from instant to instant. In the absence of the sun, the mathematical statement of the earth's motion would be "linear," but with the sun present that statement becomes "curved." The "curvature" and the "humps and hills" are not in space but in the mathematical equations of motion.

The above paragraph is really no part of my theme, but I brought up the subject only because it led Dr. Stace to the momentous declaration that "scientific laws, properly stated, never 'explain' anything. They simply state, in an abbreviated and generalized form, *what happens*. No scientist, and in my opinion no philosopher, knows *why* anything happens, or can 'explain' anything." This is in direct contradiction to the claims of a certain class of people that science is quite capable of explaining everything, and that if there are still some "gaps" here and there, it would be unsafe for anybody to try to take advantage of them, as they are liable to "close up" any day.

The truth of the matter is that the scientist is only a lawyer, and his job is to learn the laws of nature, to the sum total of which we shall apply the name Book of Nature, and to turn them to the advantage of himself and of his fellow men. Whether you take up chemistry, engineering, medicine, or broadcasting, the first thing you come up against is "laws of nature." Some people keep constantly choking over this expression; it is like a bone in their throat, neither to void nor to swallow. They like to tell you that the sun attracts the earth *because it does*, that an electric current passing through a coil magnetizes it *because it does*, and that zinc displaces copper in solutions *because it does*. Such tautological explanations will satisfy an intelligent person no more than if he were told that every automobile in London carries a name plate of a particular type because it does.

The scientist therefore makes up his mind that "laws of nature" is not some metaphor but an actuality, and he proceeds with the study of some portion of the Book of Nature in much of the same spirit that the ordinary lawyer proceeds with the study of the statute books of his country. Unfortunately, however, the text of that Book is not available to us, and its contents must be guessed from painstaking observations of what is going on in the world, much as a person would learn the laws of a country the language of which he does not understand. This is, of course, a hit-and-miss process, and it may take a long time and the co-operation of many persons before all the clauses, provisos, and exceptions of a law can be

learned in that manner. Perseverance, however, will bring its usual rewards.

But as to the *whys* of the laws of nature, this is entirely outside of the scientist's province. Even the ordinary lawyer cannot always give the reason for every law on the statute books. Yet, the lawyer being the same kind of creature as those who enacted the statute books, can often easily enter into their mental processes. The Author of the Book of Nature, however, is a radically Superior Being, Whose ideas are as unfathomable to us as the tensor calculus is to the cat.

But why introduce a Superior Being? Because that seems to be the only way out of my endless difficulties. For instance, I look up at the star Sirius to which the three little stars in the belt of the Orion are pointing, and I am beset by innumerable questions, only a few of which I may mention here. I am told that Sirius weighs about 49×10^{26} tons, is at a distance of 51×10^{12} miles away from us, and has a surface temperature of 11,000° C., and I like to know how that gigantic body happens to be at that enormous distance and how it acquired that terrific temperature. I am told that big as it is, it consists of atoms of something like 10^{-8} in. in diameter, and that each atom, in turn, consists of a nucleus around which many electrons travel in various orbits, and I am bewildered as to how the ultra-minute atom can contain so complicated a structure. The electrons in the atom, I am told, keep amusing themselves by jumping from orbit to orbit, and every such jump results in the emission (or absorption) of a packet of energy. The size of the packet depends on the orbits between which the jump took place; but every packet, large or small, becomes in some mysterious way transformed into a radiation of some frequency or other, frequencies being measured in hundreds of billions of electromagnetic cycles per second. All this is weird enough; but the most marvellous thing of all is that between each packet and its corresponding frequency of radiation there is always the same ratio h which is equal to $6{\cdot}55 \times 10^{-27}$. Where did every electron in every atom in that gigantic star and everywhere else in the universe learn the value of h, and why must every packet conform itself to it?

When the packet of radiation has left the particular atom in Sirius which has generated it, it naturally spreads out in all directions in ever-increasing spherical surfaces. By the time it has reached the retina of my eye, it is spread out over a sphere of 51 billions of miles in radius, and the amount of it per square inch must be infinitesimal. But unless the quotient of the amount of energy entering any particular atom of my retina by the frequency of the particular radiation is just equal to h, that atom will not be affected and no vision will result? But how is that managed?

The radiation energy impinging on my retina effects chemical

changes in it. But why? The retina must respond to an immense variety of frequencies in accordance with the different colours and shades of colours we can distinguish. But how? Whatever changes take place in the retina must be propagated somehow along the optic nerves. But how? The current along the optic nerve must, through the intermediacy of the brain, produce a picture in the mind. But how? With my questions "how," I am not after the details of the mechanisms involved, such as the cones and rods in the retina, but why do these mechanisms produce just these results. There are really many more questions to be asked in connection with the simple phenomenon of seeing Sirius and in connection with every phenomenon in nature, but anyone who cares to can easily find them for himself.

But what are the answers to all these questions? It seems like an insoluble problem. But whenever you are up against an apparently insoluble problem, it is often a good suggestion to formulate a somewhat similar problem but with simple features, say, with very small numbers. After you have found a solution for your imitation problem, a way may be indicated to you for solving the actual problem.

I look about my room and my eye falls on my footstool. How did its component parts come to be shaped and assembled into a footstool? I was not present when the footstool came into being, and my question remains unanswered. I examine the arm-chair I am sitting in and ask a similar question about it, and this also remains unanswered. Similar questions with regard to my desk, bookcase, bed, chiffonier, wardrobe, and other articles of furniture seem to result in so many apparently independent mysteries. Occam's razor, however, suggests a way out of the difficulty by replacing the various individual mysteries by a single mystery, which is not so much of a mystery, after all, in so far as it agrees very well with my daily experience. I decide that it was a carpenter who designed and constructed every piece of my furniture. Of course, never having seen that carpenter, I have no means of telling whether he was tall or short, blonde or brunette, or any other details about him. But these details are really of no consequence. Suffice it that he had ideas about furniture and the ability to carry these ideas into effect.

To the many questions in connection with Sirius and thousands of similar questions my reply is the same. All the phenomena of the world are thus and so, because a Superior Being wished them so. My inability to describe His appearance in detail is really of no consequence. I can only say with the utmost confidence that He is a Being with wishes and the ability to make these wishes effective.

And now for the various topics forming the subject-matter of Dr. Stace's article and of mine.

I am at one with Dr. Stace that "this familiar world is the only real world, the only world that really exists." The physical world consists of those phenomena which have not as yet become familiar because of the elaborate apparatus required to observe them and because of their comparative unimportance in our daily life. Not so many years ago radio was part of the physical world; now it is quite familiar and it has taught people a good many words they have not known before, and which they as yet only partly understand. Television is still mainly in the physical world, but it is expected to be transferred before long to the familiar world and thus extend the everyday vocabulary still more. The inscrutable world of Reality is a myth, and need not be considered.

The "things in themselves" are fictions, incapable of being observed either directly or indirectly. It is the so-called signals that they are sending to us that form the realities of our world. Lorentz missed being the father of relativity merely because he had a fixed idea of some mysterious "true time" and regarded all "local times" as illusions. We shall, with Einstein, regard all permanent illusions as realities, even if they be only local.

The stuff of the world is properties, meaning by a property that which, interacting with some part of our body, is capable of evoking some interpretation from our mind. All the objects in the world, our minds included, are but aggregates of properties. My table is an aggregate of brownness, hardness, sonority, floatability, combustability, cleavability, and many other physical, chemical, and electrical properties, some of which may not be known as yet. If it is important for some purposes to know just how brown my table is, this can be given in terms of a wave-length on a spectrum scale. The hardness may be referred to a table on which the hardness of shellbark hickory is 100, of yellow oak is 60, of chestnut is 52, etc. The sonority may be expressed in so many vibrations per second, the floatability in terms of some specific gravity table, and so on. In this manner, our table, like Sir Arthur's elephant, may become a mere "bundle of pointer readings." But, whether we can devise measurements for the properties or not, the properties are the realities of our world. To repeat, the "table in itself" is a fiction; our real table is a name given to a certain aggregate of properties, some of which properties may be still unknown to us.

Our mind is not something *sui generis*; like any other organ of our body, it is merely an aggregate of properties. Our liver is an aggregate of properties or abilities to manufacture bile, to convert glucose into glycogen, to make fats oxidizable, and so on. Our mind is an aggregate of properties or abilities to think, wish, imagine, feel, interpret, and so on. It is its component property in virtue of which it is able to put interpretations on interactions between other

bodies and our own body that interests us most in our present discussion. But, of course, this is but one component of a large aggregate of properties.

An aggregate of properties may consist of *any* properties whatever, and colour, sound, taste, smell, etc., need not necessarily be components of the aggregate. Mass, for instance, is supposed to be a component property of all bodies; but should it be proven at some future date that mind is absolute massless, that would not debar it from being a body. Such proof, however, would be extremely difficult. Relativity tells us that a gram calorie has a mass of $4{\cdot}7 \times 10^{-14}$ gram; that is, if $4{\cdot}7 \times 10^{14}$ calories were suddenly added to a body and before any of this heat was lost it were weighed, its weight would be found to have increased by one gram. Possibly, when this statement is verified experimentally, a way will be found to ascertain the mass of a mind.

One thing in particular must be clearly understood. When God made the first ninety-nine properties of a one hundred property aggregate, He was not under the slightest compulsion whatever as to what that last property should be. He could make it anything He pleased, so long as it was not a direct cancellation of any of the previous properties. Consequently, when a scientist has ascertained ninety-nine properties of an aggregate, he may, of course, on the basis of previous experience, venture a guess as to what the next property may be. But, should the guess prove wrong, there is not the least ground for surprise.

There is, for instance, a certain property in virtue of which electromagnetic cycles may be transmitted through vacant space. As this property is not a component of any known aggregate, we may give it a name by itself and call it "aether." But we have no right to endow that aether arbitrarily with other properties such as rigidity, elasticity, etc. There may or there may not be other properties to form an aggregate with the one just mentioned; but, if there are each and every one of them must be determined independently by experiment.

Scientists have been greatly perturbed a few years ago to find that light, which was supposed to have been definitely proven to be a wave motion, exhibited corpuscular properties. Their surprise was first increased and then decreased when it was found that the electron, which was always understood to be a particle of negative electricity, exhibited wave phenomena. By this time they have ceased to be surprised at anything. They are no longer constructing "models" from which, on the basis of a few ascertained properties, the others can be guessed. Each and every property in an aggregate must be determined independently.

Dr. Stace objects to the term "potential energy," arguing that if

the energy is not being exerted, it must be only a fiction or a mathematical expression. However, a coal dealer may quote us different prices for different kinds of coal on the basis that the one kind had 11,000 B.t.u. per lb., the second kind had 12,000 B.t.u. per lb., the third kind had 13,000 B.t.u. per lb., etc. Should we protest that all his coals were as cold as rocks and there was no evidence of any B.t.u. about them, he will suavely explain that we have but to bring kindling wood, matches, and a calorimeter, and the various B.t.u. per lb. obtained will justify the different prices demanded. Or the boss may insult us with a cheque for £25 in remuneration for our valuable services during the past month. Should we demur that the cheque is no money but only a scrap of paper, he will tartly suggest that we have but to take it to the bank and the cheque will become actual money, and in fact exactly £25, which is rather more than our work is worth to him.

I have brought up this matter because I have to point out that an aggregate of properties may consist of both active properties, which may evince themselves immediately either directly or by the use of suitable apparatus, and of potential properties which may come into evidence only after the lapse of years or after the aggregate has given birth to another aggregate of properties. J. Reinke, in his *Die Welt als Tat* and *Die Natur und Wir*, has coined a word "dominants," which in plain English means compulsions, and I shall have to use this word in the following paragraphs.

When God set an electron spinning on its axis and revolving about a proton and told it to be hydrogen, He first of all endowed it with the properties of forming water when properly brought together with oxygen, hydrochloric acid with chlorine, ammonia with nitrogen, etc. But in addition He instructed it to place dominants in each drop of water it formed not only that the water be wet, a solvent, a thirst quencher, and so on, but that it know at what temperature to boil under any particular pressure, and the corresponding density, heat content, etc. I have heard sometimes that a man using a powerful magnifying glass has written out the Declaration of Independence on the back of a postage stamp. If this be true, it is certainly marvellous. But to write out a complete steam table, for both saturated and superheated steam, in every drop of water in the world, is a feat worthy of the Creator Himself. If you have any doubts on the subject, just ascertain the boiling points of water for various pressures in London, ask a friend of yours in New York and another friend in Australia to do the same, and then compare notes. The tautological explanation offered by some people that the reason why water everywhere and always when under a pressure of 14·7 lb. per sq. in. boils at a temperature of 212° F. is *because it does* deserves no consideration.

Dominants for similar tables must be placed in every drop of ammonia, carbon dioxide, sulphur dioxide, mercury, and other vaporizable liquids. How else would each liquid know how to behave?

A fertilized ovum is but a speck of protoplasm; and no matter how you scrutinize it, you will never discern in it anything like eyes, ears, arms, legs, lungs, kidneys, etc. And yet there must be in the ovum dominants determining the structure, size, and function of every organ in the offspring not only at the moment it is born, but also a year later, ten years later, twenty years later, and throughout life. One of the dominants determines the various faculties of the mind, providing, for instance, that grass should evoke in it an interpretation of greenness. It could just as easily and just as "naturally" have provided that grass should give us a sensation of a high C note, or of a voltage varying inversely as the fourth power of the distance.

It was stated above that the name Book of Nature was given to the sum total of all the laws of nature. It must be remarked here that properties and laws of nature are equivalent terms. Gravitation, for instance, is a component of every aggregate of properties. This means that every atom of matter in the world must contain a copy of Einstein's law of gravitation including the exact numerical value of the "gravitation constant." For otherwise, how would the moon know how fast to fall towards the earth, how would Jupiter know how fast to fall towards the sun, and how would the astronomer know how to compute the weights of binary stars.

To some people the idea that the world was created by a series of commands seems preposterous and incredible. To their knowledge, all the doings in this world are by means of hands, tools, and machinery. But all human doings consist only of transportations, either the transportation of a body as a whole, or the transportation of the parts of a body relative to each other, as in the winding up of a spring. To make a table, the carpenter transports tools over lumber, transports the resulting parts into a certain arrangement, transports nails over them, and transports a hammer over the nails; he may also transport glue, sandpaper, and varnish. But in each and every transportation of his, he is making use of one or more properties of materials, which means of the laws of nature. To produce urea, F. Wohler made certain transportations of ammonium cyanate, potassium cyanate, and water under certain conditions. He had previously made other transportations which were of no avail. It was only when he happened to make exactly the transportations prescribed in the Book of Nature that he got the desired result. If you examine carefully the activities of every human being, from those of the cobbler to those of the constructor of television appara-

tus, they invariably consist of transporations, and the results are strictly in accordance with the laws of nature. But when God came to create the world, there was nothing to be transported, and the Book of Nature was still to be written. His *will* was His only material and His only tool.

To sum up, "things in themselves" are fictions. They are intrinsically unobservable, and, in accordance with the Einstein-Heisenberg ideas, whatever is intrinsically unobservable is to be regarded as non-existent. The only observables are properties, and every object in the world, mind included, is therefore to be regarded as an aggregate of properties. But if similar objects, such as water, in different parts of the world behave exactly alike, it is not because they have at some time held a conference and have agreed to do so. It is because they are all obeying the same commands or laws, just as all the automobiles in a given district carry nameplates of a certain size and pattern in obedience to the same law. In other words, properties and laws of nature are equivalent terms. But a law is always the expression of the will of someone who has the power to make that will effective, whether that someone be a king, a parliament, or some other legislator. Indeed, all attempts in defining laws of nature to avoid the idea of a will and the ability to enforce it have invariably resulted in meaningless mystifying tautology. Consequently, since every object is an aggregate of properties or laws, and since a law is always the expression of one having the power to make that will effective, it follows that every object in the world is but the embodiment of the will of Him whose will is law.

Therefore, our world is but the embodiment of God's will as recorded in the Book of Nature and as made evident to us in the form of properties, active or potential. Properties are thus the only realities, and they are by no means will-o'-the-wisps, but they are wisps of the will of the Creator.

TRUTH IN POETRY

MAUD BODKIN, M.A.

THE nature of poetic truth, and of the belief claimed by poetry, has become for many thinkers a question of keener interest through the discussions of Dr. I. A. Richards. In a recent article in this Journal,[1] Dr. Helen Wodehouse has expressed her own view, elicited in relation to that of Dr. Richards, concerning truth in poetry. She urges that "a great poem seems sometimes centrally to be showing us the full measure and nature of some aspect of the actual world." Our response involves essentially an element of belief in something revealed as rooted in reality, laying necessity upon the poet; even though that belief may not attach to all that the poet accepted as fact, and though we may be unable to formulate in reflective terms the nature of the truth discerned.

Sharing this conviction in regard to poetry, I wish to follow up Dr. Wodehouse's discussion by some further consideration of the nature of the truth apprehended in those poems to which we make full response. How does such truth differ from that which we recognize in scientific statement?

Our question may first be cleared from one possible source of misapprehension. When we ask concerning the truth of a great poem, such as *Paradise Lost,* we do not refer to any literal acceptance of its mythology. The distinction is well put by Professor Elton in his discussion of this poem. In regard to the central myth of *Paradise Lost* he asks:

> "Does it in Milton's hands embody some enduring truth that speaks to the imagination? . . . It is of no consequence that we do not accept it as a fact; but what of it as a symbol?"

He goes on to set forth his own reaction to the myth as Milton presents it—a reaction negative, as respects belief:

> "The topic is the irruption of evil through the misuse of man's free will. But Milton fails, through the whole transaction, really to make us feel either the presence or the power of evil. He puts his whole force into the crisis, in the ninth book. But many a reader must have obscurely felt that there is something amiss with the argument. . . . Neither the lofty eulogy on pure love nor the wonderful picture of Eve's 'distemper' after she

[1] "Poetry and Truth," *Philosophy,* VIII, p. 32.

> has eaten can make us see why the caresses of the pair should be less innocent after their disobedience, than before . . . their punishment is not made otherwise than absurd."[1]

I quote this statement because I should like the reader, as philosophic critic, to question himself concerning his own attitude to this type of criticism. Does he accept the principle assumed, that one important source of value in a poem is its revelation to the imagination of some enduring truth? Does he agree that part of our task as readers and critics is to question our experience of the poem to find where its main energies are concentrated, and whether at these focal points we feel the presence and power of some reality that belongs to our actual world?

If this assumption is granted, there arises a second question: Can we attribute to these reactions of criticism any general validity? The critic uses collective forms of speech: *Milton fails to make us feel.* But is it true that Milton so fails in the case of every reader?

For sharp contrast with Professor Elton's verdict we might compare the view of Mr. Charles Williams, to whom the story of the fall, as Milton tells it, communicates in symbolic form a "matter of experience." To him it appears that Milton has presented "the most extraordinarily exact description of the state of most men who refuse their wills to the power of a known love that any English poet ever found."[2] To strengthen further our sense of the diversities of critics, we might compare the exposition of Professor Abercrombie, to whom, as to Mr. Williams, *Paradise Lost* conveys a true image of human existence; but who, focusing the poem differently, finds its central significance not in God and Heaven as symbol of a known love refused, but in the colossal figure of Satan, symbol of the human will striving unmastered in the midst of destiny.[3]

Confronted by this and many other such examples of disagreement among eminent critics of poems deeply studied, we may feel ourselves driven back upon the conclusion of Dr. Richards, that the sense of revelation in poetry is illusory. Belief given to poetry, we may say—in the phrase of another writer[4]—belongs to the "private world" of emotional response; it has no place in that "public world" in which scientific truth exists.

If forced to this conclusion, we may be grateful for the terms Dr. Richards has provided for description of the values and effects of poetry within the individual mind. These values, he urges, depend upon "the texture and form of the attitudes evoked" in the course of the reader's experience—the "incipient promptings, lightly

[1] *The English Muse*, 1933, pp. 238–9.
[2] *Reason or Beauty in the Poetic Mind*, 1933, p. 100.
[3] *The Epic*, 1922, p. 105.
[4] A Sewell, *The Physiology of Beauty*, 1931.

stimulated tendencies to acts of one kind or another,"[1] which in their interplay and resolution make up the imaginative realization of the poem, and leave their persisting effect upon the emotional organization of the mind.

It seems possible, in terms of an organization of attitudes through imaginative activity, to reach better understanding of the varying results of criticism than when we speak in terms of a revelation of truth. Whatever psychological knowledge we possess concerning the conditioning of emotional attitudes through the course of a life history can be brought into play to help us, as we read a critic's work, to grasp the nature of his individual standpoint, or perspective. We may seek for the time to share this perspective imaginatively, then detach ourselves for the comparison of our own individual experience and that of others.

Such psychological interest and such independence of judgment seem to me necessary for anyone who is to concern himself critically with poetry: yet I feel that the problem of individual differences among critics is not adequately met by a reference to private worlds in which readers remain enclosed, enjoying their subjective responses and "objectless beliefs." The phrase we have employed, "individual perspective," suggests a more satisfying solution. For the notion of a perspective involves a common object appearing within the different visions, and, by virtue of that common object, a relation potentially discoverable of the different visions one to another.

The concept of the individual perspective has received notable development recently in the work of several philosophers. We may refer especially to the writings of Professor Whitehead and of the late Professor Mead.

Professor Mead follows Dr. Whitehead in attaching central importance to the conception of nature as an organization of perspectives. The thought of "the perspective as there in nature" is, he urges, "in a sense a donation to philosophy by the most abstruse physical science." The new theories of relativity have swept away that world of independent physical entities, of which the "distorted" perspectives were "relegated to consciousness." "In the place of such a world appear all the perspectives in their interrelationships to each other." The characters and qualities found in conscious apprehension are restored to an organic nature which both science and philosophy can recognize.[2]

Anyone accepting this general outlook upon reality must give a different form to that distinction made by Dr. Richards between the scientific and the emotive, or poetic, use of language—the scien-

[1] *Principles of Literary Criticism*, 1926, pp. 113, 132.

[2] See Essay IV, "The Objective Reality of Perspectives," in *The Philosophy of the Present*, by G. H. Mead. Edited by A. E. Murphy, Chicago. London, 1932.

tific use for public reference, the poetic for the organizing of individual emotional attitudes. Dr. Richards has spoken of the field of science as that in which references are left undisturbed by needs and feelings —impulses roused by sensory stimuli reflect or correspond with external states of affairs without disturbance from within. Such a mode of speech may serve, on the level of naïve common sense, to express the contrast between generally valid scientific truth and the more individually biased thought of the poet, or writer on moral and æsthetic themes. If, however, we desire more philosophic exactness in expressing that freedom from bias achieved by science, we must recognize that it is attained not by any "letting alone" of sensory experiences, but by abstraction from their initial richness, severe restriction of admitted aspects. "By limiting the sensory equipment of our observers," Sir Arthur Eddington has remarked, "we do a great deal to prevent their quarrelling."[1] When the content of scientific observation has been rendered sufficiently abstract, such differences as remain between observers' results can be dealt with by "formulæ of transformation." The scientific goal of perfect generality is achieved. But can it be claimed for this particular mode of achieving objectivity that it is the only one deserving consideration?

"The intolerant use of abstractions," Whitehead has declared, "is the major vice of the intellect."[2] To correct this vice, he urges, we should compare the various schemes of abstraction well founded in different types of experience; and among these types he reckons of special importance that of the poet. The survival of great poems "is evidence that they express deep intuitions of mankind penetrating into what is universal in concrete fact."[3]

It is from this philosophic standpoint that I feel one may press the contention that the belief, or sense of truth, realized in apprehending a great poem is not objectless, nor of merely private significance. It is a different mode of abstraction that is involved in poetic speech from that which the scientist uses. Let us examine in what this difference consists.

Whitehead has spoken[4] of "the extreme difficulty of expressing in language the final generalities" by dim apprehension of which human life is driven forward. He is illustrating from the concept of the human soul, its status and function in the world of experience. The idea of the self, in relation to the world of his fellows and of nature, that is active within any man's apprehension is determined largely by tradition, and this again by "accidents of genius"—the achievement of powerfully persuasive expressions of the idea, by

[1] *Philosophy*, VIII, 29, p. 35.
[2] *Science and the Modern World*, 1932, p. 23.
[3] *Ibid.*, p. 108.
[4] *Adventures of Ideas*, Part I, Ch. II.

such men as Plato, or Jesus and the first Evangelists. The intuition concerning the human soul that we find in the writings of Plato, and, in another "special expression" in the New Testament, is a supreme example of that mode of abstraction which pertains to poetic, or imaginative, as contrasted with scientific, experience. We may compare this intuition, coming to us through great literature, known as a determining force in our civilization, with the intuitions of Newton and of Einstein, moulding the development of mathematical science.

In each case we recognize what Whitehead has described[1] as the private, subjective, and the public, objective aspects of the act of experience. The intuition that came into being with its own subjective form and private intensity, as an event in an individual life history, becomes a determinant of other events. I, or any civilized individual to-day, recognize within my "given" world elements depending on the communicated intuitions of Plato and of Christ, as well as on those of Newton and Einstein. Yet the manner in which I grasp these elements depends in the one case upon an emotional development of which the stages are obscure to me, lacking inherited means of definition, while to the notions of mathematical science there is a defined pathway of approach. Though there may be few minds that can fulfil the conditions required for apprehension of the great quantitative generalizations of science, yet these conditions are laid down. I know that if my intellect can follow the path, it will attain the vision. To the qualitative generalities apprehended by poetic and moral genius the whole man must respond, and there is no recognizable path by which the vision may be certainly attained.

So we are back at the problem of the many individual perspectives of poetic truth. Does the *Paradise Lost* of Milton, do the myths of Plato, or the Parables of the Gospels, embody for me enduring truth ordering my experience of reality? According to my individual standpoint I answer Yes or No; and, within my world of social and intellectual contacts, there is no universally accepted test for determining whether I am right or wrong.

Yet the philosophic view to which we have made reference indicates a line of procedure in meeting this problem of diverse responses. Through the co-ordinating of communicated perspectives the individual can pass from the relatively private truth which his more habitual attitudes determine, towards a truth more objective and universal. Though from a great poem, living with its many aspects within the manifold life of a community, I can take only what is relevant to the form of my own acts of feeling—which may lead me, experiencing (e.g.) *Paradise Lost*, to emphasize mainly the element

[1] *Process and Reality, passim.*

of conflict, or mainly the element of harmony, subordinating the other—yet through the discipline of communication, both imaginative and reflective, I can use others' experience to extend and articulate my own. "God," says Gasset,[1] "enjoys the use of every point of view, resuming and harmonizing . . . all our horizons." It is the ideal of our socialized reason that we express in our concept of the vision of God; and our homage to the all-embracing truth God sees should find its issue in tolerance and eagerness to comprehend the sincere vision of every human spirit.

As I clarify, through reflective analysis of imaginative communication, my intellectual references to those social objects—states and forces entering our common life—which the poet may portray through heroic figures, or name God, Devil, Heaven, Hell, I am at the same time ordering my emotional attitudes toward those objects. The gain which has come to those of us whom Dr. Richards's writings have stimulated to keener interest in the attitudes harmonized by poetry is enhanced, it seems to me, when we restore to those attitudes and references which Richards separates the unity claimed for them by the philosophy of organism.

[1] *The Modern Theme,* by J. Ortega Y. Gasset, 1931.

PHILOSOPHICAL SURVEY

PHILOSOPHY IN ITALY

BENEDETTO CROCE's latest book, recently published under the title *Ultimi Saggi*,[1] is a copious collection of philosophical writings which have already appeared for the most part in Italian and foreign reviews. Yet it does not convey the impression of a collection of sporadic essays, either because a strongly unifying inspiration pervades all its pages, or because the actual contents of the writings group themselves naturally round certain focal points about which the author's intellectual interests tend to concentrate. Aesthetics, ethics, the principles of historical writing, afford the greater part of the problems and arguments treated in this book. The English public are already acquainted with some of them, such as the essay entitled *Aesthetica in nuce*, which contains the article on Aesthetics in the last edition of the *Encyclopaedia Britannica*, and the *Difesa della poesia*, which takes its starting-point from Shelley's *Defence of Poetry* and was delivered as a lecture in Oxford in 1933 at Lady Margaret Hall. Other essays on aesthetics of no less importance round off and reveal under fresh aspects some questions already treated by Croce in his systematic work. I shall confine myself to pointing out an article entitled *Le due scienze mondane*, which gives a historical demonstration of the wholly modern origin of the sciences of aesthetics and economics, and explains this modernity as arising from the new philosophical subjectivity which succeeds classical and mediaeval objectivism. The article entitled *Rileggendo l'Aesthetica del Baumgarten* affectionately recalls to mind and at the same time gives a concise critical exposition of the work of the founder of aesthetics. It was occasioned by Croce's acquisition of a very rare copy of that work which for thirty years had eluded his bibliophile zeal. And the fresh reading that his acquisition of the book has permitted him to make has given rise to a much more intensive and organic exposition than that contained in his history of aesthetics published in 1903. Here, too, as in all Croce's writings, are to be found polemical outbursts against some alleged innovators in contemporary aesthetics who appear unable to maintain even the historical positions won by Baumgarten two centuries ago with his definition of art as *oratio sensitiva perfecta*. In this connection it is pleasant to record that Croce's article in its turn has prompted a group of his friends and admirers to reprint Baumgarten's *Aesthetica* in honour of Croce's seventieth birthday, which falls in 1936.

The essay *Iniziazione all 'estetica del Settecento* is a model of the new style to which Croce, in the fullness of his intellectual maturity, has attained in the treatment of the history of aesthetics. If in his history published in 1903 he still indulged in somewhat academic habits of treating the history of thought as a history of dynastic successions of thinkers, here on the other hand the substantial interest that the problems have for him in their development has made a marked advance over his interest in their human protagonists; but this change does not carry with it any devaluation of the men themselves in their individuality, but rather a different valuation, necessitated by the facts and latent in them. The great problems of eighteenth-century aesthetics are

[1] B. CROCE, *Ultimi Saggi*, Bari, Laterza, 1935 (8vo. Pp. viii, 399).

concerned with the beautiful in nature and in art, genius and taste, sensibility and sentiment in relation to the intellect. Beside the historical figures of the first rank—Vico, Baumgarten, Kant—in the consideration of these problems there stand out also the secondary figures to whom the histories of aesthetics generally make only perfunctory allusion. In Croce's essay these stand out in bold relief from the background of the problems as investigators and discoverers, though still anxious and uncertain, of concepts whose paternity we had been accustomed to attribute to more eminent thinkers, who on the contrary have the different merit of focusing more clearly the discoveries of others. From this point of view Kant's *Critique of Judgment* appears to be not merely a solitary elaboration by the philosopher of Koenigsberg, but the point to which converge all the currents of eighteenth-century aesthetics, to radiate afresh in different directions.[1]

The numerous ethical, historical, and philosophical writings that form the second and third sections of the volume cluster to a great extent round the new conception of philosophy as the "methodology of history" of which Croce, in the latest phase of his intellectual evolution, has made himself the increasingly vigorous spokesman. The traditional figure of the "philosopher" as the proposer and solver of a single eternal problem has always been repugnant to his realistic temperament, which from the beginning has approached philosophy from the starting-point of a rich multiplicity of particular concrete problems, and he has seen in philosophy no more than a means of focussing them and co-ordinating them among themselves. In this regard there is a certain affinity between Croce's standpoint and the instrumentalist position of Dewey—as Croce himself has noted in one of his essays—but the nature of the instrument is different. On the philosophical judgment-seat the Italian philosopher is severely rationalistic, and does not allow himself any irrational or pragmatic deviations, not even those that appear here and there among the ramifications of Hegel's system (on this point see the essay: *Circolo vizioso nella critica della filosofia hegeliana*). But the affirmation of rationalism in philosophy does not mean for him a fall into panlogism. Philosophy stands face to face with life, praxis, in all the multiplicity of its interests, not to be assimilated in empty intellectual schemes. Thus thought is led back to its function of understanding, that is rationalizing life, not substituting itself for life as in panlogism. Hence the great riches of Croce's philosophy which, instead of secluding itself in supramundane remoteness from every worldly interest, continually plunges back into life, to emerge from time to time with new intellectual experiences.

In a preceding Survey I drew attention to the first volume of Stefanini's *Plato*,[2] and I am now able to announce the publication of the second volume, which proceeds from the *Symposium* to Plato's last writings.[3] The two volumes together, in the course of a thousand elaborate and closely printed pages, give a complete and organic exposition of the whole Platonic philosophy, and represent, in Italian historical studies, an effort of research and synthesis that can easily stand comparison with the most noted foreign works, such as those of Ritter, Taylor, and other contemporary students of Plato. The method of treatment in this second volume is still that of the investigation of origins, as is the general rule in all Platonic studies of the last few decades. But,

[1] I may be permitted a personal allusion. Prompted by Croce's essay, I have attempted a reduction to a smaller scale of the *Critique of Judgment*, freeing it from its connection with the other Kantian Critiques and considering it instead in the light of the evolution of aesthetic thought in the eighteenth century (KANT, *Principii di estetica*—Estratti della Critica del Giudizio tradotti e comentati da Guido de Ruggiero, Bari, Laterza, 1935, 8vo. Pp. 117).

[2] *Vide* the Philosophical Survey in *Philosophy*, October 1934.

[3] L. STEFANINI, *Platone*, vol. ii, Cedam, Padova, 1935 (8vo. Pp. 538).

together with the accurate exposition of single dialogues in their chronological order, one must take into account in this work the author's constant care to establish comparisons and relationships between the various dialogues, so as to display fully the great problems, which are scarcely ever exhausted in the course of a single dialogue. Further there is conveniently prefixed to the analysis of each dialogue a judicious bibliographical note which explains the present state of the particular questions therein treated, and illuminates and directs the whole study of the text. Finally at the end of the volume there are gathered together some bird's-eye views of vast groupings of problems—logical, metaphysical, ethical, political, etc., in which the same material that has already been analysed in its historical origins is redistributed and re-examined in its great systematic connections. A detailed account of the questions and the particular solutions proposed by the author would be impossible in the present survey; it would mean bringing once more into the arena the most hotly debated interpretations of Platonic criticism, both ancient and modern. Let it suffice to point out that Stefanini brings to bear everywhere his own original contribution, a balanced judgment, and a clear synthetic vision.

In the matter of the history of Greek philosophy another work worthy of much consideration is that of Mondolfo on the Infinite in Greek thought.[1] For some years past Mondolfo has undertaken the translation and bringing up to date of Zeller's classic *Philosophie der Griechen*, a large-scale work that exceeds in wealth of information and completeness Nestle's analogous undertaking. It may be said that the above-mentioned work on the Infinite was suggested by the study of the great tendencies in historical writing that have succeeded Zeller, which in contrast to his classicism have given prominence to numerous irrationalistic and romantic elements in Greek thought, thus opportunely completing the too one-sided and defective view of the spirit of antiquity that had been formed by the historians of the nineteenth century. The problem of the Infinite is precisely one of the problems about which the two opposing views are polarized. According to the classical party, Greek thought has expunged the idea of the infinite from its conception of the world, and is content solely with a harmonic vision of the finite and limited. According to those who favour the romantic interpretation, there is no need to go as far as Neo-Platonism, that is the age of the dissolution of the purely Hellenic spirit, to find a positive appreciation of the infinite; on the contrary, it is present at all stages of Greek thought, and especially at the beginnings, that is in the historical strata nearest to the religious and romantic fountain-heads of the Greek spirit. Proceeding from this antithesis and from the recognition of the validity of the romantic thesis, Mondolfo has completed a patient and sagacious exploration of the whole material of Greek philosophy that has come down to us, in order to trace an erudite and suggestive history of the idea of the infinite from the pre-Socratic to the Neo-Platonic thinkers. The character itself of his treatment causes him to place in the foreground the idea of the infinite in all the phases of Greek thought; at the same time he does not ignore the fact that in the general economy of that history the idea of the infinite has not always had the same importance or the same prominence, but has often been eclipsed by the opposite idea of the finite. But—and this is the most positive result of his investigation—the eclipse has not been total, and the re-emergence from time to time of that idea into full daylight at least allows the more obscure and attenuated parts of its path to be glimpsed.

GUIDO DE RUGGIERO.

(*Translated from the Italian by* CONSTANCE M. ALLEN.)

1 R. MONDOLFO, *L'infinito nel pensiero dei Greci*, Le Monnier, Firenze, 1934 (8vo. Pp. 439).

NEW BOOKS

Art and Industry. By HERBERT READ. (Faber & Faber. 1934. Pp. 143. Price 12s. 6d.)

From the standpoint of aesthetics, the most recent essay of Mr. Read, once one has seen through a title that does less than justice to its ambitious scope, leaves his previous publications—the *Art Now*, the *Meaning of Art*—miles behind; it is, in fact, by far his most important contribution to the subject. The author divides this slender work into four Parts, of which the last is in reality an amplification of some remarks on the importance of aesthetic education for the young let fall during the course of Part I. His starting-point is no less a problem than that presented by the existence of art as a tangible, audible, or visible product of human inventiveness. Following a certain school of art, scientists and historians—notably Worringer, of whose *Form in Gothic* he has given us an admirable translation—he distinguishes two entirely separate and individual types, "humanistic" and "abstract" art; the former flourished, for instance, both in the ancient Greco-Roman civilization and in Western Europe since the revival of this culture at the Renaissance, and aims at communicating emotions or ideas by a representation of real people or things; the latter flourished during the Middle Ages and its purpose is to please in immediate perception by means of harmony, symmetry, or proportion among shapes, figures, and lines. Those arts which include objects of daily use naturally belong to the "abstract" or "formal" category. This rigid dichotomy is not one that can be justified, in our opinion, by the common facts of art history or of personal artistic experience; for any work of art worthy of the name, to whatever period it may belong, whether it was designed to serve a practical purpose or no purpose at all, exhibits both form and content, both pattern and expression, in a unity that can only be severed by analytic thought. It lands Mr. Read, whose taste in this instance is surer than his theorizing, in a palpable contradiction; having told us in Part I that useful art appeals exclusively to the formal sense, he then admits in Part II that patterns often possess "vitality," and that this "vitality" can be either "dynamic" or "organic" in quality. The principal defect in this essay derives from the same source; for it is responsible for a marked tendency to neglect the movement and striving suggested by lines in favour of their geometrical relations.

Two practical consequences of the utmost importance are drawn in Part I from the agreed aesthetic character which industrial products should possess; that the young must be taught to enjoy and desire harmonious proportions in the ordinary objects visible at home or in the school, "that we have to create a new consciousness of aesthetic form," and that the abstract artist must be given a place in all industries, where his verdict on design should be unchallenged by business philistines. These, indeed, are the conditions without which industrial art will never recover the ground it lost when machinery suddenly interrupted the admirable handicraft traditions of the pre-industrial era.

Part II contains the marrow of the book; it is a brilliant and remarkably successful attempt to systematize the minor arts, so far as I am aware the best we have in English. Adopting the famous principle of Semper, he classifies

them according to the raw materials they employ; these may be either "organic" or "inorganic," according as they are derived from living or inanimate sources, or a compound if made from both together. This gives us, in one group, pottery, glass, and metallurgy; in another woodwork and textiles; and in another still those works of constructional art which combine wood and steel, or wood and stone. Having explained in this manner how it is that useful art is not a unity but a manifold, he goes on, like von Falke, to trace the separate effects of material, of technical processes, and of functional purpose, on the ultimate form its objects assume. This section is worked out in a masterly fashion, thanks to the writer's rare understanding of the technical side of industrial art.

Part III deals, very briefly, with colour, ornament, and decorative design in the sphere of practical art. He lays down in this chapter the golden rule that governs decoration, according to which it should never spoil the organic unity of the object by superfluous or redundant additions; "ornament should emphasize form." He then proceeds to distinguish between "structural" and "applied" ornament, the former being an accidental by-product of a raw material—such as the grain in wood—or of the technical processes employed in its transformation into a finished product, the latter a deliberate artistic embellishment of the object by means of naturalistic, stylized, or geometrical forms. Geometrical patterns or stylized figures are best adapted to the machine-made products of the modern era.

It is a little surprising that, though Mr. Read mentions with approbation certain German experiments in wedding the useful to the beautiful, he makes no reference at all to the remarkable progress Sweden has made in this direction since the beginning of the present century; here is another source from which British industrialists might receive valuable hints. One has bitter regrets, again and again, when a fruitful idea is suddenly dropped instead of being developed, when an historical introduction is sketched in a bare outline lacking both detail and chiaroscuro. But how could omniscience itself do full justice to so many important topics within the narrow limit of 143 pages, most of which are occupied by a collection of skilfully chosen illustrations? Let us be thankful for a brilliant and original contribution to the theory of the minor arts, and for a plea for artistic design in the workshop, for artistic sensibility in the home, that is none the less eloquent because it is sober, learned, and well-reasoned.

LISTOWEL.

George Holmes Howison, Philosopher and Teacher. A selection from his writings with a biographical sketch. By JOHN WRIGHT BUCKHAM and GEORGE MALCOLM STRATTON. (Berkeley: University of California Press. London: Cambridge University Press, 1934. Pp. xiii + 418. Price 11s. 6d.)

This handsome volume is a monument to the distinguished founder of the flourishing school of philosophy at Berkeley, California. Howison (a contemporary, in the broad, of James, Royce, and Palmer) brought to the Mills Chair the temper of a true *Metaphysiker* and the flair of a great teacher. His work has gone on. How deeply and widely philosophic influences have been active in North American culture is not yet, I fancy, fully appreciated on this side of the ocean.

The selections include parts of his chief work, *The Limits of Evolution and Other Essays*, and a number of other papers on such themes as Pantheism, Determinism, and Freedom, and the like. His view is self-designated "Per-

sonal Idealism," and has much in common with that of a British group. His closest historical affiliation is with Leibniz, while his method of attaining this position owes much to the extreme subjective arguments of Kant. He parts from the former, however, in rejecting the "caste-system" of the *Monadology*, in positing a social reference "within the self-defining thought of the individual mind," and in giving "to natural objects, as items in the real experience of minds, a reality, secondary and derivative, indeed, but still unquestionable, and associated *essentially* with the self-defining activity of every mind . . ." (p. 137). This sounds well as a programme, but how this intrinsic sociality and "unquestionable" nature can be effected in the republic of "self-originative" minds is not at all clear. On the side of consistency a more thorough-paced pluralist—such as McTaggart—seems the sounder; while the deviations of Howison appear to point to some other principle or being than that attaching to our own limited minds. In seeking to establish the eternity and integrity of *our* minds and selves Howison overlooks or minimizes the quite obvious limitations of these minds and selves. Contemporary readers may wonder whether we can put a finger on anything in our experience corresponding to "the self-defining activity of every mind," which is something Howison confidently assumes. Most of us feel that our minds are anything but "self-defined."

But these selections concern much beside personal idealism. An essay, e.g. on *The Duty of the University to the State*, is admirable.

RALPH E. STEDMAN.

Essentials in the Development of Religion: A Philosophic and Psychological Study. By J. E. TURNER, M.A., Ph.D. (London: Allen & Unwin, Ltd. 1934. Pp. 308. Price 12s. 6d.)

In this work Dr. Turner discusses the central topics of the philosophy of religion in the context of their historical development, and brings out the logical stages in this development, as one after another the different notions, either presupposed by or embodied in the religious life, are made explicit in the organized life and thought of human society. This involves a good deal of psychological investigation, as well as philosophical argument, and the book is made the richer by the mixture: Dr. Turner is right in refusing to be deterred by labels from utilizing material which can be of value to his exposition. The book ranges over a wide field in a systematic manner, and shows evidence of very considerable learning, but it is not for these reasons at all heavy or hard to read: on the contrary, it is written with life and enthusiasm and is all the fresher for the writer's breadth of knowledge. The opening chapters deal first with methodological considerations and then with the general nature and place in experience of the subject-matter of the philosophy of religion. The next section is concerned with some general characteristics of experience, metaphysical and epistemological in kind; it is followed by a series of chapters on the development of morality leading to a discussion of the moral self and a statement of the relation between good and evil. The last section deals in the light of the results achieved in the foregoing chapters with topics such as Immortality, the Supremacy of Religion, Knowledge and Faith, Authority, and Divine Personality. The conclusion of the whole matter is that man lives in a friendly universe; "it is then no merely empty metaphor to say that the Universe is friendly to every form of perfection, no matter how trivial at first sight this may seem to be, and equally to every process that makes perfection possible and brings it into being: the exhaustless beauties

of inorganic nature and of the realm of life: unknown heroisms and silent self-sacrifice: every desire and effort for whatever is good and beautiful and true: all these are eternally sustained by the dynamic force of Reality, and all that opposes them is in the end destroyed." O. S. FRANKS.

Waking World. By OLAF STAPLEDON. (London: Methuen & Co., Ltd. 1934. Pp. viii + 280. Price 7s. 6d.)

This book, as its title suggests, is rather a prayer of aspiration than a work of philosophy; but, since its author believes—with reason—that world awakening waits for a sufficient *Weltanschauung*, it involves a philosophy. It ranges from communism and fascism *via* an outline of "modern knowledge," a survey of art, science, philosophy and religion, to pacifism, democracy, free-speech, and the World-State. The human and social aspiration claims much sympathy; while for the details of the social plan there is a good deal to be said. The survey of art, science, and philosophy is, in the main, admirably done. The critique of religion (and of Christianity in particular) is obviously that of an amateur. Its two chief *bêtes-noires*, 'soul-saving' and the 'loving God,' have no place in first-rate theology and religious practice in the forms in which Mr. Stapledon envisages them: and with the second-rate we need not treat, since the ideals both of churches and of Mr. Stapledon suffer from the mediocrity and obtuseness of men. The concept of 'salvation,' indeed, holds in Christian theology much the same place that 'fully awakened living' does in Mr. Stapledon's, though, of course, the two theologies differ in what they take to be the 'chief end of man'; and the Christian doctrine of the Love of God does not abate a jot of the Hebrew sense of His awfulness. That in practice much weak sentimentalism creeps in there is no need to deny.

The author's criticism of 'sham' religion is central to his theme, since he has the 'real thing' to recommend, which, he hopes, is to prove the dynamic of a 'waking world.' This religion is reminiscent of "The Free Man's Worship," but whereas Russell preaches defiance of Fate, Mr. Stapledon preaches admiration of its tragic theme. That an "overwhelming apprehension of *something* both superhuman and beautiful" (p. 204) lies at or near the root of religion would, I think, be granted (with qualification) by most theologians. The difference between these and the author lies in this, that the former accept developments from this primordial 'something' along the lines of rational and moral anthropomorphism, while the latter, denouncing anthropomorphism in general, develops a no less anthropomorphic aestheticism in religion, one of the chief advantages of which is its immunity from reason.

More than a touch of Spinozism (or Bradleyism) marks Mr. Stapledon's world-view. "The perfectly awakened mind," he observes, "at last sees clearly that, though the defects and agony of the myriad beings of the cosmos are undeniable facts, they are also needed factors in the excellence of the cosmos" (p. 237). But one may doubt whether either Spinoza or Bradley would altogether approve of this book as a whole. Indeed, with all syncretists, Mr. Stapledon (who, in effect, accepts the designation) wants the best of *all* possible worlds, including that of M. Bergson, as well as that of Spinoza. He wants, e.g., 'creative leaps' which are also 'determined.'

The book concludes on a lower plane, urging, as means subordinate to ecstatic fatalism in the pursuit of the 'world-aim,' free-speech, pacifism, and bigger and better schools. The continuity between elements so diverse must, of necessity, be somewhat tenuous; hence it may not be unfair to say of the book as a unit that, while by no means 'void,' it is certainly 'without form.'

RALPH E. STEDMAN.

La metafisica del bello e dei costumi di Arturo Schopenhauer. By A. Cavotti. (Naples: Rondinella. 1934. Pp. xiv + 206. Price 15 lire.)

A comprehensive survey of the aesthetic and ethical theories of Schopenhauer. Being divided into thirty-one chapters, each of these is perforce brief. The beauty and intimacy of the style combined with this brevity leave the savour rather of an essay than of a chapter. The nature of the aesthetic object and the specific condition of artistic creation and of aesthetic appreciation are first considered, and then the fine arts are treated severally. A chapter on Schopenhauer's metaphysics of love effects a transition to the exposition of the ethics, which is extended to include some account of his views on law and the State. The treatment is throughout positive, in accordance with the author's declaration that "the task of the historian is simply to understand and expound." Judged within these perfectly legitimate limits, the book can be recommended as at once a very able and an extremely charming, even seductive, introduction to Schopenhauer's thought—an introduction because the field is cultivated extensively rather than intensively. The entire absence of evaluation, however, though involved in the positive method, seems to me to lessen the paedagogical value of the work: the abnegation of internal along with external criticism will not only leave unsatisfied the critical reader who at many points will want an obscurity clarified or an apparent inconsistency explained (obscurities and inconsistencies on the part of Schopenhauer, not of his expositor), but will also leave unimproved the reader who does not notice these flaws. But the book is highly informative, admirably planned, very well documented, and a sheer pleasure to read.

T. E. Jessop.

Friends of God: Practical Mystics of the Fourteenth Century. By Anna Groh Seesholtz. (New York: Columbia University Press; London: Oxford University Press, Humphrey Milford. 1934. Pp. viii + 247. Price 12s. 6d.)

The study of mediaeval German mysticism has been revolutionized during the present century, chiefly by the devoted labours of German scholars; and the importance of the movement known as that of the "Friends of God"—and especially of its founder, the great Meister Eckhart—for the history of religious philosophy has received fresh recognition. But since much of the work which has been done is hard for English readers to come by, a new and comprehensive account of the *Gottesfreunde* by one who had access to all the fresh sources of information was much to be desired. This it is which Miss Seesholtz has now given us. She is well equipped on the intellectual side for her difficult task; having evidently examined with care the vast literature of the subject, and further had the great advantage of working with Professor Rudolf Otto on the writings of Eckhart, whose intrepid genius dominates the mystical thought of the period. Eckhart, condemned by the Roman Church for "wishing to know more than one should," is a strangely modern figure in his passionate devotion to truth: which he declared that he would prefer to God Himself, were he called upon to choose between them, but added "God *is* Truth." Miss Seesholtz's account of his doctrines, and those of his disciples Tauler and Suso, is excellent. So, too, is her study of the great Flemish mystic, Ruysbroeck; who, though hardly to be reckoned among the "Friends of God," was deeply influenced by Eckhart's religious ideas. The normal outlook and discipline of mediaeval Catholicism, within which all these mystics arose, is evidently less familiar to her: and it is on this side that her book is weakest. Nevertheless, it constitutes on the whole an excellent and

well-documented account of a very intricate subject. Hardly any relevant facts appear to have been missed, and the result will be of great use to all students of Christian mysticism.

Whether from the point of view of social history, of philosophy, or of psychology, the Friends of God are among the most interesting of Christian mystical groups. In the first place, though so strongly influenced by Dominican teaching, they were, essentially, a lay movement brought into being by the necessities of the time and the corruption of the secular clergy. Some of their most influential personalities, e.g. Rulman Merswin the merchant, were laymen living in the world. Women, too, entered fully into the life of the movement. The "Friends" at the height of their development formed a vast informal association of spiritual realists, dominated on the one hand by the exalted spiritual philosophy of Eckhart and his disciples, on the other by the visionary and "tendacious" writings of Merswin and his associates. We owe to them some of the most interesting vernacular literature of fourteenth-century Germany. Their intellectual level, too, was astonishingly high; as we realize when we remember that the sermons of Tauler and Suso, largely inspired by the lofty speculations of Eckhart, were addressed either to general congregations or communities of nuns, and assumed in the hearers a considerable acquaintance with mystical theology, and the power of dealing with abstract religious ideas of a formidable kind.

Students interested in the peculiar psychological problems which the movement presents will turn at once to Miss Seesholtz's chapter on that mysterious figure, the "Great Friend of God of the Oberland"; whose identity is one of the outstanding puzzles of mystical history. Some have held that this personage was really Nicholas of Basle; others, that he was a mystical "Mrs. Harris." Miss Seesholtz gives good reason for supposing that this opinion is correct; and that his story, like that of "Sister Katrei," is a religious romance forming part of the abundant "tendency literature" produced by the Friends of God. She carries her study forward to a consideration of the influence of the Friends and their writings on subsequent religious movements, such as the New Devotion, and, through Luther, on post-Reformation Germany: and ends by an account of later religious groups who were inspired by similar ideals.

EVELYN UNDERHILL.

Practical Ethics. By the RT. HON. SIR HERBERT SAMUEL. (London: Thornton Butterworth Ltd. 1935. Pp. 256. Price 2s. 6d.)

The editors of the Home University Library had the happy thought of supplementing Professor Moore's well-known discussion of *Ethics*, which came out nearly twenty-five years ago, with another volume on the same subject, directed primarily to the problems of the moral life and called *Practical Ethics*; and they had another happy thought when they secured the President of the British Institute of Philosophy, Sir Herbert Samuel, to contribute the volume. His wide interest in philosophical ideas and his comprehensive experience of practical life in many fields marked him out as the ideal person to supply the kind of middle principle required for a survey of the ethical problem in its bearing on the life of the present day. Such a book will, of course, necessarily be written primarily for non-philosophers, though that does not mean that it will not be of interest to philosophers also. It should discuss, on a philosophical background, vexed questions of conduct, in regard to which contemporary society is puzzled, doubting what is right and what is wrong, and should presumably at the same time suggest that the

answer to the philosophical problem has some relevance to these practical problems. Sir Herbert Samuel could be trusted to keep both points in mind.

The book falls into three parts. The first three chapters provide the theoretical foundation, discussing the question what right action is. The utilitarian test of consequences is defended and the laudability of a proper self-interest maintained. After a brief discussion of free will, in which Sir Herbert Samuel takes up a determinist position, there follow four chapters in which a rather more practical treatment of the motives to right action occupies the field. Education, religion, rewards and punishments are the main social factors discussed here. In the third section the author reaches the open questions of the day. He opens with a general discussion of moral and social progress, to which he also returns at the end. Within this frame the main topics considered are three: the status of the family, the claims of the nation-state, and the rights of animals. It would not be profitable to attempt a survey of the considerations advanced under these heads. Sir Herbert Samuel is no seeker after paradox or novelty. He shows himself essentially a paractical man, sensitive, tolerant, and open-minded, wise and prudent in advice. But considering the book as a whole, I must confess to a feeling that it would have been more effective if it had been written the other way round; if the practical problems had been put first instead of last. Coming first, the treatment of the theoretical issues seems, to a philosopher at least, brief almost to the point of discourtesy—a point which is surely reached when the author excuses himself from considering the controversy as to the relations of 'right' and 'good' on the ground that it is "too technical and too linguistic in character to be entered upon here." If the theoretical issues had been stated last, the author would have needed no excuse for confining himself to those aspects of them which had special relevance to the problems raised; and the discussion, for instance, of motives would have had more actuality because of its obvious importance to such problems as those of the family and the nation. The other criticism which I should be inclined to offer is that if it were possible a more systematic survey of the practical field would be a gain. As it is, the impression is unavoidable that the selection of topics for discussion is quite arbitrary. Two problems which have been much discussed in recent times find, I think, no mention in these pages. One is the ethics of gambling; another is the class-ethics of Marxism. A systematic survey of the field could hardly have missed these. But I admit that I cannot provide the principles for such a survey, and that in such a book, confined within so narrow limits, it must always be easy to allege errors of omission. Every reader will ask for more, but they will all be ready, I think, at the same time to thank Sir Herbert Samuel for a workmanlike performance of a difficult task.

J. L. Stocks.

The Philosophy of Communism. By John Macmurray. (London: Faber and Faber, Ltd. 1933. Pp. 96. Price 3s. 6d.)

When is a contradiction not a contradiction? The answer is: When it is either organic or super-organic. Thus we should expect the English and the Romans (p. 52) to have been exceptionally bellicose because they were exceptionally peace-loving. But if they believed they loved peace and yet went to war we should call them hypocrites and discover a contradiction.

When is a contradiction a contradiction? The answer is: When it is mechanical. When is it mechanical? The answer is: When it relies on too narrow a historical induction. Thus anyone who says the English are constitutional

in their ideas is mechanical because he thinks only of the eighteenth and nineteenth centuries. When he remembers that the English had a brisk little revolution of their own in the seventeenth century, he ceases to be mechanical.

Why will communism come? The answer is: (*a*) Because it may not (p. 69), (*b*) because communism *means* a classless society, (*c*) because the bourgeoisie cannot "plan" (p. 77), (*d*) because classes are masses and masses are infra-organic, (*e*) because "power" is malign, being always competitive.

Why is theory subordinate to practice? The answer is: "Because practice is realistic and theory is idealistic"; but it is "a completely unscientific and unphilosophical method" (p. 59) to find grounds in theory for rejecting what we have a practical interest in rejecting.

If I were a praying man, I would pray to be delivered from the philosophy of communism, but I would not pray to be delivered either from communism itself or from Mr. Macmurray's books about it. His ideas are penetrating, electrifying, and even shrewd—despite his philosophy. In my judgment he is the most stimulating of all contemporary British sociological authors.

JOHN LAIRD.

New Pathways in Science. By Sir ARTHUR EDDINGTON, D.Sc., LL.D., F.R.S. Messenger Lectures, 1934. (London and Cambridge: Cambridge University Press. 1935. Pp. x, 333. Price 10s. 6d. net.)

The topics dealt with in this book are mainly scientific. Professor Eddington has endeavoured to give a picture of the developments in physics in the last few years, and to bring out some of the general problems of method and of principle to which those developments have given rise. Thus Chapters VII to XI deal successively with The Constitution of the Stars, Subatomic Energy, Cosmic Clouds and Nebulae, the Expanding Universe, and the Constants of Nature. Of the other chapters, Chapter IV on the Decline of Determinism and Chapter VI on Probability may be instanced as showing the scope of the book. In Chapter XII Professor Eddington tries (by way of experiment) to give a popular illustration of the fundamental principles underlying the theory of groups.

Only the first chapter, and the last two chapters, have definite reference to philosophical problems, and I shall confine myself to a few remarks on them.

Professor Eddington's account of the nature of science seems to be conditioned by the following principles:

I. (i) All knowledge is a matter either of immediate awareness or of inference. (ii) The only things of which I am immediately aware are my own sensations, thoughts, emotions. (iii) Among the things of which I am immediately aware are (*a*) that I am responsible, truth-seeking, reasoning, striving; (*b*) that there are certain time sequences in my experiences (e.g. I-perceive-a-taste-which-I-perceived-yesterday). (*a*) Is the basis of the problems which arise later in regard to freedom. (*b*) Is the basic experience from which the scientist starts.

II. But before anything in the nature of science can arise, we have to take a step beyond our own immediate experiences. This step involves our "committing ourselves" to "the recognition of other minds than our own." As a physicist Sir Arthur is not concerned with the problems arising from this commitment, nor with the question whether this commitment would be possible at all, for a being whose sole immediate experiences were those (as he sometimes puts it) of the "contents of his own consciousness." For Sir Arthur this "commitment" is a kind of inference, however it is made.

III. Once we have so committed ourselves, a further step becomes possible. We can recognize that some of the contents of our own consciousness communicate to us part of the experience (or content?) of other consciousnesses. Or perhaps it might be less obscure to say: we can recognize that regularities occur in the sensory experience of other consciousnesses. It is this fact that sets the problem for the scientist.

The problem of the scientist is to link these regularities (occurring within, and so limited to various consciousnesses) with a scheme of regularities occurring outside all consciousness, and so not limited to any. The two characteristics the scientist is insisting on are externality and regularity; and it is clear that these characteristics belong to the world of which the scientist is in search, by definition: he is seeking a world with just these characteristics.

IV. The process of making remote inferences from the experiences of many consciousnesses puts us in a position to give a further description of the task of science.

For by a complicated set of inferences it is concluded that the bodies of consciousnesses (I use this phrase because the relation indicated by "of" is about the vaguest and most ambiguous it is possible to use) have nervous systems, and that these nervous systems are the only channel of communication between a consciousness and the external world; so that the ultimate data of science are the nervous impulses received by consciousness in its inner sanctum. Out of these impulses so received consciousness makes a fairy story about a world of things, with colours, sounds, tastes, smells, etc.; but the scientist has learned to distrust this story: he turns back to the regularities of nervous impulse, dissociating them from the familiar story: and these regularities are the material of a cryptogram he as scientist takes upon himself to solve.

V. Ultimately, then, it is the business of physical science to get a complicated system of regularities, external to all consciousness, which will produce through particular parts of it (designated nervous systems in the familiar story) all the regularities that are discerned inside all those individual consciousnesses whose communications to each other come within the ambit of the scientist. The chapter on the Theory of Groups is an attempt to explain what kind of scheme the scientist is out for.

Something like this, I gather, Sir Arthur regards as practically common ground among scientists; and he cannot see why philosophers should find any fault with it. He would admit it to be tentative and largely a matter of hypothesis; and he would not object to its being found full of gaps and even inconsistent in places: for these characteristics belong to a growing and developing subject. And he wonders whether philosophers think they can get anything complete, systematic, fully self-consistent, at the present stage: and he thinks that many philosophers at present—particularly some of those in the realist camp—in their desire to get self-consistency and finality prematurely, are adopting views that are scientifically untenable.

It looks from all this, I think, as if Professor Eddington's attitude to many philosophical discussions is similar to that of those mathematicians who consider that Zeno's paradox about Achilles and the tortoise is sufficiently settled by calculating the exact point at which Achilles will overtake the tortoise; or to that of the average experimental psychologist toward most philosophical discussions of psychological conceptions. Why waste time in trying to get a perfectly consistent scheme under our present conditions of ignorance? Any scheme we get is provisional, and it is more important to get it in a shape that allows us to make new linkages between old observations

and new predictions about new observations, than to get it in a shape that is self-consistent. At any rate, if Professor Eddington does not take this attitude to all philosophical discussion, he seems to think that an excessive regard for completeness of scheme at a premature stage of an investigation is liable to lead many philosophers astray. And he does think that if the scientist can work better with a set of ideas that have been exploded by philosophers hundreds of years ago, than with ideas that philosophers object to less, it would be absurd for the scientist to try to use the newer ones. He also thinks that when the scientist, after getting into a mess with the philosophically old-fashioned ideas, discovers that he really can use newer ones with practical success, this is a fact to which the philosopher ought to pay special attention; for he thinks that a philosophical conception found useful in science has more importance than a philosophical conception not yet (or no longer) found useful.

This attitude will be found exhibited in his treatment of determinism, which is dealt with in Chapters IV and XIII. In this treatment there are two main points stressed: first, that science in its present state does not appeal to universal causation, and that this is an important fact; second, that our own immediate experience is of ourselves as responsible for our own nature, at any rate to some extent, and so as not determined by a chain of rigid causes. Since determinism is no longer needed in science, we are free to follow the lead of our immediate experience of ourselves. Indeed, if our immediate experience of ourselves deludes us, it is difficult to see how we can get any trustworthy start in knowledge. On pages 88–89 there is an interesting attempt to suggest a way in which we can think of the activity of a freely operating being without violating the laws of physics.

L. J. Russell.

Social Judgment. By Graham Wallas. (London: George Allen & Unwin, Ltd. 1934. Pp. 175. Price 5s. net.)

We live in an age when the creative imagination of man is urgently required to exercise social judgments in order to make new patterns of living, especially in the realms of politics and economics. What parts do reason and emotion respectively play in this art of social judgment? This is the question that Graham Wallas set himself to answer in this book, which unhappily he did not live to finish. The half we have here, however, is of real importance as setting forth the nature of the instrument of social judgment and the co-operation between reason and emotion which it requires.

By social judgment Wallas does not imply an operation of the social mind regarded as an organic consciousness. It is the personal mind operating in the field of social conduct that concerns him. Nearly all his later life and writing had been devoted to this difficult and delicate psychological task of tracing the nature of this co-operation between reason and emotion.

The process of reasoning, so far as it is pure, admits no play of emotion and concerns itself not at all with human values, except so far as some desire for truth must enter as a stimulus to the labour of thinking. The notion that man, being a rational animal, could plan his best lines of progress by calculation of utility, which underlay the rationalism of the eighteenth and nineteenth centuries, was erroneous. For, in the first place, the utility, or happiness, or welfare desiderated was conceived as detached from the reasoning process and no criterion was provided for it. And, secondly, the idea that even in the physical, and much less in the social sciences, emotional

processes of valuation could and ought to be excluded, showed a psychological simplicity that belonged to an age when subconscious processes were hardly at all envisaged.

Graham Wallas's great contribution to thought has lain in his skilled analysis of the part played by the feelings and emotions in directing social thought and conduct by the secret or semi-conscious imposition of the things called 'values' with which science proper does not concern itself, but either ignores or takes for granted. In chapters keenly descriptive of the materialism and determinism of last century, Wallas shows the waste of thought and conduct involved in a refusal to take proper account of the parts played by imagination and emotion in the processes of directing social conduct. Still more striking is his chapter on 'Economic Laws,' with its account of the sharpening of the opposition between what he terms the 'realists' and the analytic treatment of Economics, the professional teachers becoming more and more devoted to quantitative accuracy and disclaiming all 'normative' considerations, while the realists concern themselves with the administrative problems in which the live human factors, the practical operation of business in processes of production and consumption, are involved.

The growing divergency between the specialized sciences and the related arts of conduct he finds to be inimical to social progress, in that the scientist eschews all obligations to relate his reasoning to human purposes, or to adjust that reasoning to the non-rational forces which operate in social judgment. Both abstract reasoning and the methods of 'laboratory science,' by excluding 'emotion' and 'value,' "tend to produce a distorted picture of the human personality" (p. 145).

In a concluding chapter he discusses the separation between reason and values among religious leaders, supported to some extent by the new school of scientific philosophers and by statesmen. "We are not," says Mr. Baldwin, "a logical nation, and the Church of England could not exist in any other country than our own—it is a Church essentially of comprehension and a Church of compromise, and in it the devotional instinct and rational instinct may each, by its peculiar quality, live and grow together, side by side" (p. 156). In statecraft, as in religion, Wallas demands not toleration but active co-operation, and gives an illustration which is peculiarly timely. "Wise statesmanship in the British Indian situation will depend upon the degree of clearness with which British statesmen realize, both intellectually and emotionally, the probable consequences of their action" (p. 157). It is a thousand pities that Graham Wallas, one of the wisest men of our age, did not live to bring this important work to its conclusion.

J. A. Hobson.

Elements of Modern Logic. By S. H. Mellone, M.A., D.Sc. (London: University Tutorial Press Ltd. 1934. Pp. xi + 333. Price 5s.)

Dr. Mellone's *Introductory Textbook of Logic* is familiar in one or other of its many editions to most students of Logic, and it is a matter of some interest that he has written a new textbook instead of revising the older one yet once more.

Apart from the general desire to freshen the whole treatment by rearrangement and abbreviation, two reasons for writing a new book seem to have operated on the author's mind. One was the wish to incorporate some of the results of modern works such as Johnson's or Miss Stebbing's; and with this

in view Dr. Mellone has put the alternative proposition alongside of the old disjunctive and made a brief statement about relational propositions. But the new material is quite slight in its extent, and it makes no change in the author's point of view.

The other reason for making a new book was that Dr. Mellone had come, quite rightly, to think that his former book, like most textbooks for beginners, made the treatment of the theory of induction and the exposition of the inductive methods unnecessarily difficult by mixing it up with criticism of Mill's empiricism. If any depth is lost by the avoidance of a preoccupation with Mill's views and errors, there is a corresponding gain in simplicity and clarity which will be welcomed by students. For it is a mistake to attempt more in a beginners' book than merely to suggest the deeper logical problems: if they ever come to study the more advanced problems, they ought to have passed beyond a beginners' textbook.

Dr. Mellone is a good expositor, and his new book will be found quite useful by teachers who maintain that a study of formal logic and of elementary induction still have an educational value. But he might have made up his mind more firmly about what was necessary for the presentation of the subject. If the distinction between absolute and relative names is "of no logical importance" (p. 29), surely it ought not to have been mentioned at all: and the same may be said of a similar remark on page 210. It was the less necessary to cumber the text with obsolete or unnecessary matter, presumably on the poor ground that some examiners might require it, inasmuch as Dr. Mellone appends an admirable glossary in which technical terms are briefly and clearly explained.

Misprints have not been eliminated from the review copy. There is a bad one on page 104, where *from* has crept into the text, and there are others on page 190 (*have employed* for *have been employed*), page 193 (*pully* for *pulley*—but this may be Dewey's American spelling), and page 195 (*affirmative* for *affirmation*).

GEORGE BROWN.

A History of Science, Technology, and Philosophy in the Sixteenth and Seventeenth Centuries. By PROFESSOR A. WOLF, with the co-operation of DR. F. DANNEMANN and MR. A. ARMITAGE. (London: George Allen & Unwin Ltd.)

This is the first volume to appear of a more extensive work. Professor Wolf plans to deal next with the eighteenth and nineteenth centuries, and then with ancient and medieval times.

The chapters on pure science and technology give a good account of each subject taken alone, though occasionally the cross connections of some of the allied subjects, and the relations between the work of different men, might have been treated more fully and more clearly. Still, these chapters on the whole are distinctly successful.

The treatment of philosophy is on a smaller scale. In the first chapter, the beginnings of modern science from medieval thought are traced, and at the end of the book one chapter deals with the Psychology and a final one with the Philosophy of the two centuries under consideration. This is a small proportion of the total of twenty-six chapters.

Professor Wolf and his colleagues on the whole give a satisfactory if slight sketch of the philosophic background from which modern science first emerged, but they write as though Scholasticism, with the incorporation of

Aristotelian science, was the sole philosophy of the Middle Ages, instead of a somewhat late development. They rightly stress the influence of Pythagorean Platonism on Copernicus and Kepler, but miss its survival through the Middle Ages, first as the dominant philosophy, and then as the underlying alternative to thirteenth-century Aristotelian Scholasticism.

Scholasticism, as formulated by Thomas Aquinas, was a logical deduction from the Christian faith as interpreted by the Roman Church and the philosophy and science of Aristotle. Given these two authorities, Scholasticism was a complete, rational, and self-contained body of doctrine, which, to the late medieval mind, seemed to follow, logically and inevitably. That is what Whitehead meant when he described modern science, which is primarily inductive and only secondarily deductive, as a recoil from the inflexible rationality of medieval thought. Professor Wolf seems to miss the point when he criticizes this statement, saying that "due regard for stubborn facts of observation is an essential part of any thoroughgoing rationality." Nevertheless, it is of course true that a jungle of mysticism, and in the late Middle Ages a growing belief in witchcraft and sorcery, made a difficult soil for science to grow in. Professor Wolf does well to stress the help given by the common-sense element introduced by the technical arts, which "learned their lessons from a direct study of the facts" and, especially "after the invention of printing, played a part in the objective attitude of modern science."

The Copernican revolution, at first a mere mathematical simplification, when established as a physical reality by the telescopes of Galileo, did much to dissipate the homocentric philosophy of Aristotle and the Christian Schoolmen. But Galileo's work on the foundations of dynamics and his return to the atomic views of Democritus, which made matter and motion the realities instead of Aristotle's qualities and categories, did even more. Galileo's dynamics were carried further by Huygens and Newton, though the fundamental principle of all three was the same looked at from different aspects. The full philosophic effect of Newton's great synthesis did not appear till the days of the French Encyclopaedists of the eighteenth century, when, indeed, its importance was exaggerated. Thus it is not treated in the present volume.

Galileo recognized that secondary qualities—colour, taste, smell, etc.—were psychological phenomena in the observer, and not essential parts of the body observed. In chapter xxiv, on Psychology, these ideas are traced through the similar views of Hobbes, and an account is given of the psychology involved in the dualism of Descartes, and in Spinoza's theory that "physical and mental processes are concurrent manifestations of one and the same living organism," as well as his conception of free will, according to which its opposite is not necessity or determinism, but external compulsion. Thus Spinoza returns in effect to Bacon's dictum that we conquer Nature by obeying her. Next, an account is given of Locke's sensible empiricism, which regards the mind as a sheet of white paper, written on by experience, and of Leibniz's "monads," the highest of which are self-conscious minds.

In tracing in chapter xxvi the gradual separation first of philosophy and science from theology, and then from each other, Professor Wolf works by describing "the leading ideas of the chief modern philosophers up to the end of the seventeenth century, with some digressions on the philosophical views or pre-suppositions of those pioneers of modern science, who were not primarily philosophers." Thus we get short accounts of Bruno, Francis Bacon, Hobbes, Descartes, Spinoza, Locke, Leibniz, More, Barrow, Boyle, and Newton.

In his astronomy, Bruno cast off the last traces of pre-Copernican views

in teaching that the stars were not fixed to a crystal sphere, but were suns scattered through infinite space, but it was his pantheistic philosophy that chiefly brought him into conflict with the Inquisition. There is no denying that Bruno was burned and Galileo somewhat inconvenienced by that meddlesome body, but, like many historians of science, Professor Wolf overestimates the obstacles thus created. To take one instance: he implies that Leonardo da Vinci refrained from publishing his discoveries and speculations for fear of unpleasant consequences. But Leonard lived in the short interval when the Papal authorities held liberal views; moreover, he wrote also only rough notes on art, where no question of heresy was involved. I think his failure to record his work was due to the multitudinous number of his researches, and his haste to take up a new and thrilling investigation which left no time to write out the results of the last one.

The work of Bacon is described at length. Bacon's great merit, of course, is his condemnation of the authoritarian logic-chopping Schoolmen, and his insistence on experimental facts, ordered by reason, as the right road to knowledge, and by it to improvement in what we now call the standard of life. But, as Professor Wolf points out, "While Galileo and others were already constructing a new physical science in terms of material atoms or corpuscles, motion, and their mathematical laws, Bacon was still thinking in terms of Aristotelian concepts of matter, form, qualities, and the correlated notions of material, formal, efficient, and final causes," though he strove to decrease their number. Bacon tried to reduce scientific discovery to an almost automatic process, and much underrated the value of originality and scientific insight.

Hobbes carried Galileo's explanation of physical bodies in terms of matter and motion into a mechanistic interpretation of the Universe—of mind as well as matter. Descartes, putting in the forefront the methods of mathematics, somewhat underestimated the importance of empirical induction in sciences not ripe for mathematical treatment. From *cogito, ergo sum*, he passes to the belief that all clear intuitions can be accepted as true. Matter is identical with space, and space is continuous and therefore a plenum; whatever part of space moves together is a separate particle. By such ideas Descartes was led to the theory of vortices. The human body is a machine, and the mind is connected with it only in a part of the brain. Thus Descartes's philosophy is ultimately a dualism.

Spinoza regarded reality as at once Nature and God, and developed a philosophy which was pantheistic, naturalistic, and rationalistic, but his naturalism, unlike that of Hobbes, was not materialistic; to him substance is merely the entire system of attributes, and ultimately identical with God. The final test of truth is the harmony of all that is known, and not the bare empiricism of Bacon.

Locke accepts the reality of material bodies, but admits that nothing is known about their "real essences," only that they are bundles of certain primary qualities. The result of his teaching was to disparage ambitious philosophic systems founded prematurely on physics, to encourage the pursuit of science in a strictly empirical spirit, and to uphold a liberal-minded toleration in advance of his age.

Leibniz opposed mechanistic philosophy, and regarded substance as essentially centres of force or "monads," the higher kinds of which are self-conscious human souls, derived from the "Monad of monads" or God. Thus Leibniz's philosophy is the exact opposition of that of Hobbes—all is spirit instead of matter, though both need God to hold their worlds together.

The mechanistic trend of some philosophies founded on science, like that of Hobbes, was opposed also by More and the other Cambridge Platonists,

More arguing that the direct awareness of self-activity was enough to prove that there is something incorporeal in nature, and Barrow that it was the divine nature of space and time, as the omnipresence and eternity of God, that accounted for the special lucidity and certainty of mathematics. Thus we are led to Robert Boyle, severely empirical in physics and chemistry, but conscious of the importance of the fact that "there are *de facto* in the world certain sensible and rational beings that we call men"; then to Newton's conception of absolute space and time, and his great physical synthesis, which led to the most notable philosophic system of the eighteenth century, and dominated scientific thought for more than two hundred years.

W. C. D. Dampier.

Berkeley and Malebranche. A Study in the Origins of Berkeley's Thought. By A. A. Luce, D.D. (London: Oxford University Press; Humphrey Milford. 1934. Pp. xii + 214. Price 10s.)

This book is a notable contribution to the history of Berkeley's philosophy. Dr. Luce gives a charming account of how he came to write it. "Reading where Berkeley read, using sometimes the volumes he used, I studied the authorities he mentions. Malebranche was to me, at the outset, simply one of a large number of such authorities. The extent of Berkeley's debt to the *Recherche de la Vérité* came to me as an unanticipated discovery. The following pages contain my attempt at detailed verification, and show surmise passing into assurance."

Dr. Luce's primary aim is to establish on internal evidence that Berkeley used extensively the *Recherche de la Vérité*, and that Malebranche was to him a master-mind, one of his two primary sources, comparable in importance to Locke, and in some ways of higher importance. This thesis is worked out by Dr. Luce in great detail, and all students of Berkeley will be grateful to him for the new light he throws on the relative importance of the sources of Berkeley's thought. It will be generally agreed by most competent readers of Dr. Luce's book that the extent of Berkeley's indebtedness to Malebranche has been underestimated by previous writers on Berkeley, and it will be necessary for every future historian to take account of the results of Dr. Luce's work. Dr. Luce is too good a scholar to attempt to prove his case by belittling the influence of Locke. He agrees that to neglect the Lockian element in Berkeley would be to fly in the face of the facts; and he sums up the relative influence of the two men in a phrase with which it would be difficult to quarrel: "Locke taught him, but Malebranche inspired him."

The method adopted by Dr. Luce is to examine in detail the influence of Malebranche at each stage of the development of Berkeley's thought. He begins with an analysis of Berkeley's relation, as evidenced in his early mathematical work, and in the *Commonplace Book*, to the "angelic rules" of Malebranche. He then passes in review detailed parallels between the *Theory of Vision* and Malebranche's *Search*. The main body of his work, after these introductory chapters, consists in a careful and detailed examination of the influence of Malebranche on the principal features of Berkeley's thought, his attitude to "matter," his doctrine of "ideas," and his general epistemology. Particularly interesting to the historical student is Dr. Luce's chapter entitled "The Alleged Withdrawal," in which he emphasizes the essential continuity and solidarity of the philosophy of Berkeley, who remained throughout "an unrepentant immaterialist, anti-abstractionist, theist, and Trinitarian."

In an appendix Dr. Luce gives a valuable new argument for determining the time-order of the entries in the *Commonplace Book*. In the main he agrees with the view, first advocated by Lorenz and myself and now generally accepted, that note-book B is prior to note-book A, and he supports this view by a careful examination of the orthography of the word "idea" in the various entries. He shows, I think conclusively, that in the first third of the *Commonplace Book* Berkeley wrote "idea" invariably, in the central third "idea" and "Idea" indifferently, and in the last third "Idea" consistently. This change in orthography is important not only in its bearing on the historical question of the time-order of the entries, but it is also, as Dr. Luce points out, an outward and visible sign of an abiding change of intellectual orientation. On the basis of this argument from orthography, Dr. Luce suggests certain minor changes in the time-order as given in the numbering of the entries in my edition of the *Commonplace Book*. I agree that these changes should be made. While finality has probably not yet been reached on this vexed question of the time-order, we would now appear to have attained a reasonably close approximation to the *Commonplace Book* as Berkeley wrote it.

G. A. Johnston.

Marxism. By J. Middleton Murry, John Macmurray, N. A. Holdaway, and G. D. H. Cole. (London: Chapman & Hall. 1935. Pp. 245. Price 5s. net.)

This book is an elaboration of four lectures on Marxism given in the spring of last year under the auspices of the *Adelphi*. It consists of an introductory chapter on Marxism in general by Mr. Murry, three chapters on Philosophical Presuppositions by Professor Macmurray, two on the Economic Basis by Mr. Holdaway, and two on Political Issues—one by Mr. Murry and one by Mr. Cole. There is a short bibliography, but no index.

The chapters which will be of most interest to readers of this Journal are naturally Professor Macmurray's. Professor Macmurray admits that there are no satisfactory expositions of Marxian philosophy, and that Marx himself, alone amongst Marxians, had the gifts necessary to producing one; and, as the title of his contribution suggests, he does not pretend to make good this defect but simply to bring out "one or two of the fundamental presuppositions of the philosophical attitude of which dialectical materialism is the current and limited expression, and which lie at the roots of Marxism" (p. 29). According to him Marxism consists not so much in a new set of thoughts, as in a new way of applying thoughts to reality; and he exemplifies this by some remarks on Marx's relation to Hegel, in which he suggests that Marx was concerned to apply the old set of ideas consisting of the dialectic in the new way suggested by the substitution of materialism for idealism. He then endeavours to explain what this new way is by means of a discussion of the so-called "unity of thought and action." Admitting that most knowledge, and in particular scientific knowledge, makes no difference to its object, he points out that this does not hold of one's knowledge of oneself or of the society of which one is a part. The philosopher, in fact, whose knowledge is necessarily of himself and of society, is doubly concerned with action; his intellectual efforts are actions upon himself and his society, and they are also representative of the actions of which society essentially consists. Philosophy, therefore, whatever it ought to be, is necessarily propagandist. And in particular "pure" philosophy is propagandist for the *status quo*; since it is generally indifferent to society, and in any case can only be con-

cerned with the society of the present, it must imply that there is no need to embark on activities directed to bringing about the society of the future.

In the following chapter Professor Macmurray tries to distinguish dialectical materialism from two theories with which its opponents, and also its own more superficial adherents, tend to confuse it, namely mechanistic materialism and pragmatism. Both theories, according to him, fail to recognize the unity of thought and action. Mechanistic materialism does so by presupposing the distinction between mind and matter; whereas dialectical materialism overcomes this distinction and has already been seen to be materialist in a different sense. And further reasons are offered for calling it by that name. For example, "it is action that counts and all action is necessarily material. We act as bodies upon bodies" (p. 48); and the dialectical materialist is concerned, in a purely scientific way, with the material conditions of the realization of ideals instead of with the contemplation of ideals for their own sakes, which is characteristic of the idealist. Pragmatism, on the other hand, depends directly on the distinction between thought and action, and consists of an arbitrary attempt to bring them together by making the latter a criterion of the former; moreover, it presupposes, for the discovery of what actions are satisfactory, the pure knowledge which it officially denies. It is indeed little more than an explanation of how so-called truths come to be believed. Professor Macmurray's final chapter is of less immediate philosophical interest, consisting mainly of a practical application and illustration of his argument up to this point. He is concerned with how "ideologies" grow, how they affect and are affected by social processes; and he attempts to give in terms of his ideas on these questions an explanation of the class struggle and of the prospects of social revolution.

It is presumably natural for philosophers, even if they have no conscious Socialist sympathies, to be interested in a philosophy which enjoys such uniquely close connections with practical affairs as Marxism does. And it is certainly natural for them, even if they have conscious Socialist sympathies, to be discouraged in their efforts to become acquainted with this philosophy by its terminology and by the methods which are generally used in argument on its behalf. They will, therefore, be grateful to Professor Macmurray for having offered them an exposition of which the language and methods of argument are, as far as possible, of the kind familiar to them. Nor can it be questioned that his discussion, whatever its relation to orthodox Marxism, has succeeded in illuminating some of the dark places of the theory. But it is difficult to resist the impression that it has only been able to do so at the cost of creating new difficulties. What, for example, is meant by saying that a thinker "represents" his society? The natural answer to this question is, of course, that his thought is a social product, determined, in accordance with the materialist conception of history, by the social conditions of his time. But how precisely does this happen? Professor Macmurray admits that the determination is not complete, apparently supposing that our ideas affect ourselves and society through their appeal to the mind, and recognizing that there is what he calls (p. 64) a "prophetic element in ideologies"; even Mr. Holdaway, who appears to be more orthodox, admits that action can be "based on" the "abstractions" of which mind consists (p. 123). But there is nowhere any attempt to discuss the extent of the determination, still less to describe the nature of the ultimate "historic impulse" which, since it seems to exert the same dialectical functions as Hegel's idea, is presumably the key to these mysteries. Then what is truth? Professor Macmurray's explicit argument is that "pure" truth is impossible; and he would doubtless say that truth, no less than thought itself, was determined by social conditions

and was indeed the special quality of those thoughts which were most effectively representative of society. But he does not seem to recognize that, though dialectical materialism may not presuppose pure truth in the way that he accuses pragmatism of doing, it is equally guilty of claiming purity for the truth that there can be no pure truth; and his whole discussion of pragmatism seems to imply that the dialectical materialist is in pursuit of a purer truth than the pragmatist. Nor is it easy to see why pure truth is necessarily reactionary, even if it is necessarily propagandist. It is surely possible to hold, on grounds of pure truth, that society ought to be changed; and there appears to be a good deal of pure truth in Marxist views about what the society of the future ought to be. No doubt these objections will seem irrelevant and unimportant to those who have fully grasped the fundamental revolution of thought involved in Marxism. But many ordinary philosophers will continue to be troubled by them and will regret that Professor Macmurray does not show how he would meet them. It is probable that they could only be effectively met in a comprehensive and detailed exposition of the Marxian philosophy as a whole. But Professor Macmurray has himself deplored the absence of such an exposition; and he has shown so many of the gifts necessary to explaining these matters to the uninitiated that it is permissible to hope that he will some day produce one.

The other parts of the book are not, of course, without interest, even to philosophers. Those who have been stimulated by Mr. Murry's writings about literature and religion will no doubt also be stimulated by his writing on Marxism, and are not likely to be troubled by his unorthodoxy. In his view the essence of Marxism is to be found in the self-surrender and intellectual humility which are characteristic of all great philosophies and religions, and which in Marxism take the form of recognizing, in a passage which he frequently quotes from the *Theses on Feuerbach*, that "the human essence is not something abstract inhabiting the separate individual: in its concreteness it is the totality of social relations," and of dedicating oneself to the political and social activity demanded by the recognition. But when he comes to discuss what this activity should be, he is hesitating as well as unorthodox, though he has some wise words to say about the necessity for educational equality as a condition of all social progress. Mr. Holdaway writes with ability and subtlety, though not always with lucidity, on the nature and future of capitalism, and is influenced throughout by his view that the mark of scientific knowledge is successful prediction. Perhaps because he is an economist, his Marxism seems to be more orthodox than that of his fellow-contributors; certainly his predictions are not always the same as theirs and often imply a different attitude towards the predictions of Marx. Mr. Cole's chapter is the clearest in the book; he writes objectively and with penetration on the applicability of Marx's analysis of historical development to the present-day political situation, admitting its general validity but at the same time stressing the emergence of new social classes and other factors which Marx could not have foreseen. O. DE SELINCOURT.

Mind, Self, and Society from the Standpoint of a Social Behaviorist. By G. H. MEAD, edited by C. W. MORRIS. (U.S.A.: University of Chicago Press; London: Cambridge University Press. 1935. Pp. xxxviii + 401. Price 22s. 6d. net.)

This is the first of a projected series of three books, giving to the world a fairly complete presentation of the philosophical ideas of the late Professor

G. H. Mead of Chicago. The theme of the volume is social psychology in its larger outlines, and the volume itself, according to Mr. Morris, its editor, is the "natural entrance into Mead's intellectual world."

Mr. Morris provides an admirable introductory summary, and in the footnotes gives a sufficient indication of parallels in Mead's various published articles. Certain appendices apart, however, the book has the inevitable disadvantage of being elaborated from lecture notes (very careful and complete) instead of coming direct from Mead's pen; for although the spoken word is often superior to the written, it seldom looks so well in print. On the other hand, very few lectures, delivered as these were without notes, would be so proportionate as well as so satisfying in their phrasing.

Mead's admirers (including his editor) claim that he had a first-rate zetetic mind; that he and Dewey, while complementary in their talents, stood together on the same high intellectual plane; and that both pragmatism and the theory of democracy owe approximately the same debt to these two philosophers, to Mead as the more skilful analyst, and to Dewey as having the greater range of vision. Now that an informal alliance has been struck between the pragmatists and the Wittgensteinians, these high claims will doubtless have an added interest on this side of the Atlantic. True, Mead was sometimes moved to say what he did not mean; for example, that he was not much interested in "the metaphysics of the dog." In reality, however, he was very much interested in that very metaphysic (whether of bees, or of dogs, or of men), and his book is a philosophical (social) psychology of very considerable merit.

Most readers (I opine) will be struck most of all by the thoroughness with which Mead here developed (*a*) his pragmatism and (*b*) his social theory, and I shall make a few remarks on these matters, although I should also like to say that many of the incidentals of the book (for example, the fragments on ethics, principally Kantian, at its close) are decidedly worth pondering, and that my selection of topics may very well be much more arbitrary than I think it is.

(*a*) The pragmatism is behaviouristic but non-Watsonian, and it attempts (with great fidelity to instructive detail) to sketch a theory of mind, of self, and of society. Mind is held to have developed from gesture and from other-observing movements. When gestures become symbolical (as in language), they imply ideal functions, that is to say patterns of response which acquire a certain universality and recognizable stability in others and/or in the agent. Mind exists wherever symbolical action between "biologic individuals" is possible. Self, as distinguished from mind, is regarded as a derivative of self-consciousness.

It is impossible to be just to such a hypothesis in a reasonably short review, but it may be pardonable to observe that Mead appears to me to exaggerate the possibilities of this part of his method. The method allows him to say: "If consciousness, mind, etc., emerged in such and such a context, their utility would be so and so, and developments of a certain type might be anticipated." Mead seems to me to assume, however, that a plausible account of mind's opportunities is also a full account of its origin and essential nature; and any such view looks like a teleology *sibi permissa*. No doubt, Mead might have said that no other method promised useful results, and that there is no more point in asking how knowing is made than in asking how being is made; but I have not noticed that he said these things, and I have the impression that he seldom, if ever, meant them.

(*b*) John Grote maintained long ago that "all intelligence is co-intelligence," and various attempts have been made, both before and after Grote's time,

to prove that society is in some important sense prior to individual minds and wills. In any such contention, the principal requisite is patience with stubborn detail and an adequate dose of self-criticism. Mead excelled in both, and his book, largely for that reason, seems to me to be the best I have seen in English on this particular theme. Mead does not deny that the "biologic individual" is in some sense prior to society, but he develops the theory that gestures (including symbolic and linguistic gestures) are always social things, and that, although personal contributions affect society, the predominant truth lies with those who perceive that society is the *prius*, not of biological existence as such, but of mind and selfhood.

It seems highly probable that Mead's work in this field will come to be generally recognized as a definite advance in a fascinating, if perplexing, enterprise.

JOHN LAIRD.

Studies in the Philosophy of Creation. With especial reference to Bergson and Whitehead. By NEWTON P. STALLKNECHT. (Princeton: University Press; London: Humphrey Milford. 1934. Pp. xiii + 170. Price 9s.)

Can recent philosophy be said to have produced that extremely rare thing, a genuinely new idea? The contention of this book is that the idea of creative process, as described by Bergson and certain other recent and contemporary philosophers, introduces a genuinely new alternative to the traditional views, of the world as having been created by the volition of a transcendent creator who created it for a sufficient reason, or of the world as the temporal mode of expression of eternally necessary being. Creation in the new sense is described as the fusion of different patterns into unpredictable wholes. Such a process demands "material elements," by which Mr. Stallknecht seems to mean whatever is "given" with a determinate structure, including objects of physical experience and mathematical and logical schemata. But creation is not a mere arrangement of material elements—a jig-saw puzzle. There also enter into it *constitutive* elements, which have no determinate structure till the creation is completed. It is a pity that the author has not illustrated this distinction. Presumably he means by "constitutive" such elements as the characters of a novel or the expression on a person's face in a portrait. The distinction seems to be an important one; to make creation the actualization of possibilities which already exist as alternative abstractions with a determinate structure reduces it to selection from a catalogue. Mr. Stallknecht owns that this is the difficulty in Whitehead's view of actuality as the concretion of eternal objects (see p. 137; though he does not seem to feel this difficulty in his summary of Whitehead's view on p. 91). The real question (which Whitehead answers in the negative) is whether there can be creation of new *possibilities*; i.e. not simply that pre-existent possibilities should become relevant for actualization, but that the arising of new actual situations should create genuinely new possible situations—ideal elements and ways in which they might be synthesized. It is probably contrary to Whitehead's intention (though it may seem to be the only way of taking some of the things he says) to reduce creation to a selective decision from a catalogue of alternative possibilities. His real concern is to contend (as against Bergson) that there must be *logical stability* in the world; that there should be logical stability may be ultimately inexplicable, but it is a primitive assumption as the condition of any actual creative process. He is contending that logical order (like the structure of a Bach fugue) is the condition and not the shackle of creative achievement.

Mr. Stallknecht makes a point of showing that there are really two views to be found in Bergson—the one an irrational, mystical view of pure becoming, the other the description of a process of growth as a unique fusion of elements, on the analogy of aesthetic creation. This distinction is valuable, since it is on the former view alone that logical stability becomes spatialized distortion, destructive of creative freedom. This is the more spectacular interpretation of Bergson, and the one on which his critics have naturally fastened. But on the latter interpretation, Bergson is giving a profoundly sympathetic description of the way in which a number of elements are given concrete embodiment in a new and unique whole, the uniqueness of which can be grasped by imaginative intuition. Intellectual analysis of the formal elements of the new whole is no substitute for such intuitive appreciation, though it may be preparatory to it.

The discussion of Bergson is the principal and most useful part of Mr. Stallknecht's book. The chapters on Alexander, Croce, Gentile, and Whitehead are too short to do these thinkers justice. He would perhaps have been well advised simply to have introduced references to their views by way of comment on his discussion of Bergson. We may doubt whether it serves a very useful purpose to give a brief summary of Whitehead's later philosophy largely in Whitehead's own words. If the reader has already struggled with Whitehead's terminology such a summary is superfluous; if not, it is probably meaningless.

To my mind the book raises two crucial questions for the modern philosophy of creation. First, are we justified in drawing analogies from artistic to cosmic creation? Is art essentially "artificial" or is the artist a spearhead of a creative process, of which the work of art rather than the logical argument is the microcosm, so that through understanding better how the artist does his work we may imagine how new forms of being are fashioned in a plastic world? And, secondly, do the forms "fashion themselves," and, if not, how is the persuasive agency of ideal values in their creation to be conceived?

DOROTHY M. EMMET.

The Origin and Development of Religion in Vedic Literature. By P. S. DESHMUKH, M.A., Ph.D. (Foreword by A. B. KEITH, D.C.L., D.Litt.). (Oxford University Press: Humphrey Milford. 1933. Pp. xvi + 378. Price 22s. 6d.)

This work was written as a thesis for the degree of the D.Phil.(Oxon) and its being herewith presented to the public in the same incomplete form in which it was accepted by the University is excused by its author, a pupil of the late Professor A. A. Macdonell, of Oxford, and Professor A. B. Keith, of Edinburgh, with the heavy responsibilities that have meanwhile fallen on him as the Minister of Education in the Central Provinces, India. It is a thoughtful book based on a large material and dealing in four parts with (I) "Definition and Origin of Religion," (II) "Indo-European and Indo-Iranian Religion," (III) "Vedic Religion," and (IV, incomplete) "Brahmanism." Its leading idea, developed mainly in Part I, is that religion does not owe its origin to magic (nor to fetishism, animism, ancestor worship, or totemism), but springs directly from the "belief in powers beyond" which is also the root of magic, and that both of these "existed side by side in the most primitive times." Here magic and religion mean a belief (with corresponding practice) in powers conceived respectively as coercible or uncoercible; and the combated theory is that of Frazer and others believing in an age of magic succeeded by one of religion. The thesis is applied with great ability to the religions under discussion. It throws light first of all on Zoro-

astrianism which thus appears as a revolt of religion against magic (the Magi) and, consequently, as entirely different from the supersession, in early Vedic India, of the Asuras by the Devas, though in both cases the "gods" of the earlier belief become the "demons" of the later; and it proves fruitful again for understanding the further evolution of Vedic literature where magic is seen to conquer religion until, in the Upaniṣads, a reaction sets in from a non-priestly quarter. It definitely does away with the view (objected to already on other grounds) of the contemporaneousness of the (magically inspired) Atharvaveda with the Ṛgveda; and it is in perfect agreement with Carpenter's conviction that nomadic conditions (like those we have to assume for the prehistoric Aryans) are not favourable to magic. The spread of magic in later Vedic India is primarily due, without any doubt, "to the increased contact and association with the aborigines of India" (p. 62). "Magic, generally speaking," says our author (p. 63), "is the curse of a settled, undisturbed, and isolated life"; and it is just this sort of life that is shown by the ruins of Mohenjo-daro to have been for centuries that of the pre-Aryan urbane population of the Indus valley which, moreover, had connections with the stronghold of magic, Mesopotamia.

We are surprised to miss among the many books used Oldenberg's *Vorwissenschaftliche Wissenschaft* (Göttingen, 1919), the only existing work on the magic view of life in ancient India. F. Otto Schrader.

The Philosophy and Psychology of Sensation. By Charles Hartshorne. (U.S.A.: University of Chicago Press; London: Cambridge University Press. 1934. Pp. xiv + 288. Price 13s. 6d. net.)

Most psychologists will find it an exceedingly difficult task to arrive at a fair evaluation of the argument of this book. Psychological opinions and hypotheses lie shoulder to shoulder with the widest philosophical generalizations and theories; facts which have been experimentally observed—for the most part by other investigators—jostle interpretations of them by the author. Moreover, the fundamental hypothesis, in spite of the most strenuous and persistent attempts by the author to make it clear, seems to elude definite statement. In the end it is not quite easy to see what it all amounts to, except an exceedingly able effort to get the philosopher to take an interest in the psychologist, and the psychologist to pay attention to the philosopher.

Dr. Hartshorne negatively states his thesis thus: "The currently accepted principles of scientific research and explanation, as well as the most characteristic ideas of contemporary philosophy, have not as yet been applied, with the thoroughness which the problem merits, to the question of the nature and distribution of the qualities immediately given in sensation, such as 'red,' 'sour,' or 'warm'; and as a result the conceptions generally held regarding these qualities conflict with the recognized criteria of a fruitful scientific hypothesis, or of an acceptable philosophical idea."

This defect he proposes to remedy by means of a theory about sensory qualities based on five "fundamental notions": (1) Mathematical *continuity*; (2) Aesthetic meaning or *affective tone*; (3) The fundamentally *social* character of experience; (4) Biological *adaptiveness*; (5) *Evolution* from a common origin. Obviously not one of these notions is a new one, and so, perhaps, one would look for evidence of the originality which is claimed for this volume in some peculiar novel arrangement of a group of notions which are not, as a rule, considered together. Actually, however, the great bulk of the argument is

concerned with illustrations and discussions of inter-modal qualities and with a consideration of affective-tone as "the stuff of which the entire content of consciousness is composed."

Professor Hartshorne has studied seriously all the investigations he could find of the type in which colours are called "warm," tastes "hard," sounds "voluminous," and the like. There are a lot more of them than his own introduction might suggest. The account he gives would have been a great deal clearer if it could have been more disconnected than it is from interpretations; but still it is good. It is a little odd that what are probably the most striking experiments of recent times on this topic, those of E. von Hornbostel and his students on inter-modal *Helligkeit*, receive mention only in an inadequate appendix. These "complication" phenomena, as they used to be called, are often spoken of in the book as "analogies," but the author clearly thinks them to be more than this. He considers that they must all show a common origin of sensation qualities, and that this common origin is to be found in an affective continuum. Just how they emerge from this common origin it is not at all easy to see, but apparently the job is done through the social character of all experience and the adaptive character of biological response.

At the beginning the author condemns current psychological views about the qualities of sensation as unfruitful, and perhaps he is right. He implies that his own hypotheses are not going to be open to this criticism. Now here it is necessary to be careful. A scientific hypothesis is not fruitful merely because it suggests lines of concrete inquiry. The investigations to which it leads must do more than confirm the relations which it itself states. They must open up a developing field of knowledge, and not merely accumulate more and more illustrations, all of them on precisely the same level. It is therefore particularly interesting to study a section at the end of this volume which is headed "some predictions." Dr. Hartshorne says that future investigation will show (*a*) that pitch is a physiological analogue of visual brightness to a more complete degree than anybody has as yet realized; (*b*) that auditory "density" will be further studied; (*c*) that the auditory neural response will be found to vary in some way "analogous to the 'modulations' or what not which underlie visual chroma"; (*d*) that red vision will be found to have the same physiological factor in it that warmth possesses, and that green or blue-green will stand in the same relation to coolness; (*e*) that pleasure will be found to involve "cellular health" and pain "cellular damage." None of these predictions, however, adds anything to his hypothesis; they only say that a physiological basis for it will be found, and the most that any one of them would do would be to add a new illustration on just the same level as all the rest. Meanwhile I am afraid that I cannot see anything much in the book which will help the inquiring psychologist or physiologist who wants to know how to look for these identities.

It may be that the philosophical implications of Professor Hartshorne's views are vastly important and far-reaching. As to that, I cannot venture to express an opinion. I can admire his thoroughness, his decisiveness, the ease with which he writes, and the great range of studies which he has covered. I can agree with him that it is high time that the empirical psychologist attempted a reconsideration of sensory qualities regarded as modes of experience, and not merely as a kind of analytical notion. Yet, writing solely as a psychologist who is not uninterested in the theoretical aspects of his science, I am bound to admit that I have found this book confusing rather than genuinely helpful.

F. C. Bartlett.

Sociology. By Morris Ginsberg, M.A., D.Litt. (London: Thornton Butterworth. 1934. Pp. 260. Price 2s. 6d.)

It is a difficult task to write a volume for the Home University Library. An authority in a department of knowledge is asked to give an account of it in a brief space, and in such a fashion that the general reader will understand and be interested. The author, being a professional and not an amateur, can take few liberties with the handling of his material in order to facilitate his approach to the public; for he must satisfy professional standards. In dealing with sociology these difficulties are at their maximum since, whatever definition is adopted of the subject, it is of enormous scope and of infinite complication. Professor Ginsberg begins by discussing definitions of sociology, and this is in line with sociological tradition. Indeed many sociologists get no further than attempting to prove that their own conception of sociology is theoretically valid and potentially valuable. This is in marked contrast to the proceedings of those who have opened up other branches of knowledge; they find new territory and go ahead with exploration, leaving it until later to discover the boundary and the scope of the operations which can be conducted within it. It would have been interesting if Professor Ginsberg had seen his way to plunge straight into his material, and to have let it emerge at the end what it is that sociologists have done and are trying to do.

In other words, it would have more original, and perhaps ultimately more illuminating, if Professor Ginsberg had recast his treatment, and had begun with the material that he sets out to present in Chapter 3. Thence onwards we have a discussion built up into a most coherent structure. Chapter 3 deals with the physical environment and with race, and Chapter 4 with a psychological analysis of those elements in human nature which bear most directly upon the relations of man to man. These two chapters are thus devoted to some study of the underlying circumstances which condition social life. This opens the way to a discussion of social organization and social control which occupies Chapter 5, From that we pass in Chapter 6 to some observations on class structure and economic organization. In Chapter 7 follows a discussion of the trends of mental development, and the concluding chapter reflects upon the interrelation of these topics, and upon the future tasks of sociology. Continuity is admirably preserved, and we are led by a most profitable path all round the field of social inquiry whence we get all sorts of interesting and profitable views. But it is a hurried journey, and the comments of our guide are unavoidably condensed; we would often gladly have lingered and heard a little more. Going round the British Museum with a conducted party must be the same sort of experience. No one man could be better informed than Professor Ginsberg is on all these topics, and it is impossible to praise too highly the fairness with which he deals with them; his treatment of the problem of race is especially admirable. These are not common accomplishments, but the mention of them alone would not give a sufficient impression of the quality of the book. The author possesses, what is much more rare, a mind of remarkable power, In everything which he touches he exhibits a grasp and a penetration which make the book really impressive.

Thus we have a book which every social student can read with profit, though, by reason of the compression of the argument and of the paucity of illustration, it is not easy going. But it is another matter to admit that it is a sketch of a subject which can be called sociology. Some very fundamental matters are left undecided. Is sociology wholly reflection upon the results of other social sciences, or does it engage in field work of its own as well? It is usually claimed that sociologists do both. If so, where is the field? It

would seem that sociologists claim to wander freely over the whole territory of social experience. If so, are they merely workers with interests different from those of ordinary specialists, and are they not claiming to conduct profitable operations in a territory that is too large for any one group of men? It is one thing to welcome a book like this, and another to admit that is an argument for, and far less a proof of, the existence of sociology.

A. M. CARR-SAUNDERS.

The Aesthetic Response: an Antinomy and its Resolution. By MILTON C. NAHM. (Philadelphia: University of Pennsylvania Press. 1933. Pp. 56.)

This short American thesis is a study of the problem, highly important to the philosophical as distinct from the scientific aspect of aesthetics, that arises on a consideration of the peculiar relation between art and morality, between the beautiful and the good, a question responsible at all times for the most conflicting opinions. The "antinomy" of Mr. Nahm is produced by the diametrically opposite views of those who maintain, like Plato, that art is inimical to those personal qualities essential to the good life, and those others, like Shelley, who have urged that it serves to strengthen and support them. "Art is at once degrading and inspiring." A solution is reached by determining the function of art in terms of its effect on the spectator, by analysing this effect in the light of modern psychology, and by showing that its psychological ingredients are far from inconsistent with the highest personal qualities.

The function of art is to provoke an emotional "aesthetic response," it aims at "affecting or moving the perceiver." But this consists in a muscular reaction that produces a thin, attenuated emotion similar in kind, though not in degree, to the instinctive emotional adaptation of the animal, the child, or the barbarian to its immediate environment. Now education teaches us not to fly suddenly into a paroxysm of anger or fear, but to control our emotions by means of the will and to substitute rational motives for blind impulsions in the conduct of life. The aesthetic response is therefore "an indication of progress," and so more encouraging than injurious to the moral life.

Mr. Nahm is to be congratulated on his boldness in attacking a problem at once so delicate and so important, and on selecting the only strictly scientific method of pursuing it to a final solution; but his aesthetic and psychological equipment are unfortunately quite inadequate to the task he has set himself. It is not enough to say that the aesthetic response is "emotional" without distinguishing between aesthetic and practical emotions; it is not enough to say that art aims at "affecting or moving the perceiver" without distinguishing between the various effects of a street-corner oration, a pornographic post-card, and a Beethoven Symphony; and surely the James-Lange theory of the emotions is by now a relic of the past! Neither in the text nor in the foot-notes to this essay can I find an indication that the writer has read anything produced in Germany since the beginning of this century, save only one article by Lipps; and he, poor fellow, is made responsible for a view he disclaimed with Sisyphean persistence, namely that "muscular adjustment is the basis for the theory of empathy or einfühling."

LISTOWEL.

The Fundamentals of Psychology. By W. B. PILLSBURY. 3rd edition. (New York: The Macmillan Co. 1934. Pp. xii + 663. Price 12s. net.)

In this third edition of *The Fundamentals of Psychology* Professor Pillsbury has kept his aim well in view: to present "an impartial statement of the more

important facts of the science." He has provided the student with a comprehensive textbook for a year's work in the subject. The subject-matter is set forth with great clarity, although the book is not "easy" and will not hold a casual reader. This is a textbook for a competent student who will not be overwhelmed by a full load of information and who will be prepared to follow up some of the standard references given at the end of each chapter.

As in the earlier editions, the first chapters are devoted to an account of the nervous system and sensations. The selection of material here is excellent, and the reader who may find the going hard will be repaid by returning when he has made some progress with the later chapters.

Descriptions of individual differences, of what is native and what acquired in human conduct, of feeling and of emotion, furnish an introduction to learning and to the problems of knowing. Retention, selection or attention, and meaning are regarded as the primitive functions of knowledge and are dealt with before such specific topics as perception or memory. In the chapters giving a general discussion of these primitive functions the reader is made familiar with the newer doctrines of Gestalt in contrast with the older theories of association. The chapter on selection or attention is particularly good, as might be expected from the author's earlier book on this subject. The problem of meaning is taken up by Professor Pillsbury under the title of "The Unit of Experience." He regards his theory of "types" as standing between the older structural view of knowledge and the newer Gestalt doctrine. For Gestalt psychology knowledge of an object is given as a whole, the *Gestalt* is independent of any building from past experience, it is not a structure of sensations and images. Unlike *Gestalten*, "types" are organizations that develop with experience. In perception the sensations acting at the moment are corrected and *standardized* by past experience. Once such a standard organization has arisen, any sensation or image is merely a sign to be interpreted in terms of the "type." The retinal image will vary as the object is far or near, the brightness will change with the amount of light, but the same standard interpretation of the object will be given. "What is important is the total reference" (p. 389). Similarly, "typical" concepts are formed. "A type for the class . . . is related to the separate objects in much the same way that the type in perception is related to the separate presentations of the same object" (p. 396). What is left vague in this theory is how and why "types" develop. We have the statement, "there is a tendency for perceptions to be standardized" (p. 392), and not much more by way of explanation. Following the general discussion of meaning are two chapters on the perception of space and the perception of movement and time. The treatment of the latter topics is commendably fuller than is usual in a textbook. In the chapter on memory there is a certain overlap with the earlier chapters on learning and recall, but the account of experimental work is clear and valuable. A chapter is given to reasoning, another to imagination and dreams. Under volition the threads of the earlier account of motor learning are gathered up and knitted into a discussion of drives, motives, choice, and freedom of the will. The student will find a good survey of the experiments on fatigue and work curves and of the theories relating to personality and the self in the chapters on these topics.

The final chapter is in some respects the weakest in the book. It is a review of the characteristic schools of psychology. The outlines are too fragmentary to be of value. In the case of Freudian psychology and of the Gestalt school much of what is given here is already presupposed by the more specific references to these doctrines in the chapters on dreams, memory, and perception. Considering the influence which Professor McDougall's teaching has had on social psychology, the short paragraph dealing with the purposive

school is conspicuously inadequate. But when all is said, the third edition of *The Fundamentals of Psychology* is a textbook to be recommended to students. It is well illustrated by diagrams and well documented.

BEATRICE EDGELL.

Men and their Motives, Psycho-Analytical Studies. By J. C. FLUGEL, with two essays by Ingeborg Flugel. (London: Kegan Paul, Trench, Trübner, & Co. 1934. Pp. vii + 289. Price 10s. 6d.)

With two exceptions the essays contained in this admirably produced and well indexed volume are reprinted from periodicals, and it is good to have brought them together. The contents, ranging from Birth Control to Henry VIII by way of Esperanto, are too miscellaneous to permit of detailed criticism. Professor Flugel's name is an adequate guarantee of the style and temper of the book. He explicitly recognizes that even a psycho-analyst may be prejudiced, but, perhaps in consequence, there is little evidence of any prejudice beyond that which inevitably attends the holding of systematic theories. He presents his views modestly, and usually cautiously, with an ease that disguises the depth of his detailed argument. The most important of these collected papers appear to be those on "The Psychology of Birth Control" and "Sexual and Social Sentiments." The author here applies psycho-analytic theory to the elucidation of the psychological problems presented by social relationships, and by the fervent support of sociological views. The close and profitable discussion demands of the reader an intimate acquaintance with psycho-analytical literature, since it draws conclusions from the details of the underlying theory. These conclusions are eminently reasonable, but to accept them fully requires a prior act of faith. While it was obviously no duty of the writer to demonstrate his fundamental principles in these essays, the unprofessional reader must regret that he has no ready access to the data from which they are derived. To present to the layman the facts, and the mode of argumentation, which lie behind the psycho-analyst's utterances is no doubt difficult, but it is a task which is becoming urgent. For if Professor Flugel's method is sound and his conclusions valid, they are of great theoretical and practical importance, yet their fruits cannot be gathered until educated opinion accepts the basic principles, and this is unlikely to result from authoritative utterances alone, We read, for example, "Patriotic feelings for one's native land are, we know, very frequently derived in part from displacement of the mother-regarding affects; our native land is our mother" (p. 163). It is not improper to ask just how this knowledge was gained, and the psycho-analyst could tell us if he would. So the author's conclusions, so admirably reasoned from his premises, must remain in the air until those premises are not merely stated, but publicly demonstrated. This is disappointing to the reader who feels that the conclusions are probably true, but desires proof that they are so.

The need for some demonstration of principles is perhaps most marked in the *tour de force* entitled "Esperanto and the International Language Movement." In this essay, sufficiently interesting apart from its technical discussion, we learn that if the views of Dr. Ernest Jones are correct, "we must surely suppose that this equivalence of the linguistic with the sexual holds good, not only of speech in our native language, but also of our attempts to speak in foreign tongues" (p. 179). Is the premise so perfectly established that we must accept the conclusion with all its surprising implications? Section V, containing a rich variety of material brought forward for interpretation, will awaken a demand for a stricter method of proof.

In the concluding essay ("On the Character and Married Life of Henry VIII") the writer explains the king's marital ill success as the consequence of his relations to his father and elder brother. He makes out a strong case, though ignoring other factors, such as physical pain, which may in part account for the more violent manifestations of Henry's character. At the end he argues that such applications of theory to historical data provide a test of the validity of the psycho-analytic method, and claims that such studies have in fact given evidence of its utility and validity. There is a risk of circular reasoning here. If we study Henry's early family history, and endeavour to trace its influence upon the development of his character, we may decide that his family relationships were the cause of his later behaviour, and make that conclusion the nucleus of a general theory; or, assuming the truth of psycho-analysis, we may conclude that the behaviour was caused by the earlier conditions. But we should not argue from effect to cause and from cause to effect at the same time. Dr. Flugel's treatment is in fact an *a priori* application of his theories to the historical material, and his success can at most offer some indirect pragmatic support to the strength of the theory. If his principles are sound, Henry's behaviour is explained. We still await the demonstration of the principles.

The essays by Ingeborg Flugel on "The Significance of Names" and on "Some Psychological Aspects of a Fox-Hunting Rite" add to the attractiveness of the book, which can be commended to those who have some acquaintance with psycho-analytical literature. They will find in an enjoyable and scholarly form fresh evidence of the wide importance of the Freudian psychology.

A. W. Wolters.

Combustion from Heracleitos to Lavoisier. By J. C. Gregory, B.Sc., F.I.C. (London: Edward Arnold & Co. 1934. Pp. vii + 231. Price 10s. 6d.)

The author of this book has rendered a service to the history of science by putting on record the reactions to the phenomenon of combustion of thinkers of all periods from Heracleitos to Lavoisier. In doing so he has displayed in a most convincing manner the superiority of thought based upon experiment to the abstract thought of the non-experimental philosopher, since, to a chemical reader at least, the early discussions on the nature of fire are incredibly tedious and almost stupidly inconclusive. The importance of the speculative side is, however, illustrated both by the valuable experiments which were made in order to demonstrate or to test the theories which were current during the seventeenth and eighteenth centuries, and also by the stranglehold which they often exercised on the interpretation of experimental results, since correct experiment did not inevitably lead at once to correct theory. As the author points out in his preface, preconceptions play a significant rôle as a directive of thought, a rôle which may be that of a *misleading prepossession* or a *fertile guiding hypothesis*. The long delay between the first experiments on the kindling of flames and the discovery of the part played by oxygen in combustion is therefore assigned by him to two principal causes, since (i) preconceptions blinded insight and (ii) systematic experiment did not mature till the seventeenth century.

The whole story provides a vivid illustration of the maxim which Sir J. J. Thomson delivered to the Science Masters' Association in Cambridge, when he remarked that "A theory is a tool and not a creed," since a tool is only of value when placed in the hand of a worker who is both willing and able to

use it. The earlier arm-chair philosophers were, perhaps, too proud to use for the purposes of manual labour the tools which they had created so cleverly in their own minds; in an intermediate period, willing workers, such as Priestley and Cavendish, were handicapped by the obsolete tools, which they had inherited; and it was not until the time of Lavoisier that the right tool in the hand of the right worker provided a pattern for all the best developments of modern chemical science. The lesson is a salutary one, and it is of real value that it should be placed on record.

T. M. Lowry.

Books received also:—

George Herbert Palmer, 1842–1933. *Memorial Addresses*. Cambridge, Mass.: Harvard University Press; London: Humphrey Milford. 1935. Pp. 80, 5s. 6d.

Lord Davies. *Force*. London: Constable & Co. 1935. Pp. x + 242. 3s. 6d.

Canon C. E. Hudson. *A Preface to a Christian Sociology*. London: G. Allen & Unwin Ltd. 1935. Pp. 136. 4s. 6d.

C. C. J. Webb, F.B.A. *The Historical Element in Religion*. (Lewis Fry Lectures, 1934.) London: G. Allen & Unwin Ltd. 1935. Pp. 118. 4s. 6d.

N. A. Robb, D.Phil. *Neoplatonism of the Italian Renaissance*. London: G. Allen & Unwin Ltd. 1935. Pp. 315. 12s. 6d.

K. Koffka. *Principles of Gestalt Psychology*. (International Library of Psychology and Philosophy.) London: Kegan Paul, Trench, Trübner & Co. 1935. Pp. xi + 720. 25s.

Various. *Possibility*. University of California Publications in Philosophy, Vol. 17. Berkeley: University of California Press; London: Cambridge University Press. 1935. Pp. 223. 10s.

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F. C. Thomas, B.Sc. *Ability and Knowledge. The Standpoint of the London School*. (Foreword by C. Spearman, F.R.S., Ph.D.; Appendix by E. Walters, Ph.D.) London: Macmillan & Co. 1935. Pp. xx + 338. 15s.

R. Karsten, Ph.D. *The Origins of Religion*. London: Kegan Paul, Trench, Trübner & Co. 1935. Pp. vii + 328. 12s. 6d.

J. W. Parker, M.A., B.D. *The Idea of Salvation in the World's Religions*. London: Macmillan & Co. 1935. Pp. viii + 259. 6s.

J. E. Boodin. *God. A Cosmic Philosophy of Religion*. New York and London: The Macmillan Co. 1934. Pp. 240. 8s. 6d.

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C. Tolly. *Janus-Man in Starry Night*. Oxford: Shakespeare Head Press. 1935. Pp. viii + 101. 5s.

W. K. Wright. *A Student's Philosophy of Religion*. (Revised edition.) New York and London: The Macmillan Co. 1935. Pp. xvi + 566. 12s. 6d.

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Various: *Awareness and the Neuroses of Declining Years*. London: C. W. Daniel Co. 1935. Pp. 53. 2s. 6d.

T. T. Segerstedt. *The Problem of Knowledge in Scottish Philosophy*. Lund: C. W. K. Gleerup. 1935. Pp. 157. 4 kr. 50 öre.

N. O. Lossky and J. S. Marshall. *Value and Existence.* (Part I. Tr. by S. S. Vinokooroff.) London: G. Allen & Unwin Ltd. 1935. Pp. 223. 7s. 6d.

Various: *Science, History and Theology.* (Aristotelian Society Supplementary Vol. XIV.) London: Harrison & Sons. 1935. Pp. 213. 15s.

Anonymous. *My Philosophy. By an Unprofessional Thinker.* Oxford: Shakespeare Head; Basil Blackwell. 1935. Pp. xvi + 145. 5s.

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F. H. Bradley, O.M., LL.D., F.B.A. *Collected Essays.* Oxford: Clarendon Press; Humphrey Milford. 1935. Pp. Vol. I, ix + 347, Vol. II, 348–708. 36s. the two volumes.

The Rev. Hieromonk A. Van der Mensbrugghe. *From Dryad to Triad. A Plea for Duality against Dualism and an Essay Towards the Synthesis of Orthodoxy.* London: The Faith Press. 1935. Pp. xxi + 153. 7s. 6d.

R. L. Nettleship. *The Theory of Education in Plato's Republic.* (Introduction by S. Leeson.) London and Oxford: Clarendon Press; Humphrey Milford. 1935. Pp. viii + 155. 2s. 6d.

P. E. Przywara, S.J. *Polarity. A German Catholic's Interpretation of Religion.* (Tr. A. C. Bouquet, D.D.) London: Oxford University Press; Humphrey Milford. 1935. Pp. xii + 150. 8s. 6d.

The Sāṅkhyakārikā of Īśvara Kṛṣṇa. (Ed. and tr. by S. S. S. Sastri. 2nd ed. revised.) Madras: University of Madras. 1935. Pp. xxxviii + 129. Rs. 2. 4s.

C. Grabo. *The Meaning of "The Witch of Atlas."* Chapel Hill, U.S.A.: University of North Carolina Press. 1935. Pp. ix + 158. $2.50.

L. J. Henderson. *Pareto's General Sociology. A Physiologist's Interpretation.* Cambridge, U.S.A.: Harvard University Press; London: Humphrey Milford, Oxford University Press. 1935. Pp. vii + 119. 5s. 6d.

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E. W. Hirst, B.Sc. *Jesus and the Moralists. A Comparative Study of the Christian Ethics.* London: The Epworth Press. 1935. Pp. 189. 5s.

A. J. Arberry, M.A. (Translator). *The Doctrine of the Ṣūfīs,* by A. B. al-Kalābādhī. London: Cambridge University Press. 1935. Pp. xviii + 173. 10s. 6d.

A. M. Boase. *The Fortunes of Montaigne. A History of the Essays in France,* 1580–1669. London: Methuen & Co. 1935. Pp. xl + 462. 18s.

Variés: *Recherches Philosophiques.* IV. 1934–35. (Fondées par A. Koyré H-Ch.; et P. A. Spaier). Paris: Boivin et Cie. 1935. Pp. vi + 530. Frs. 65.

Variés: *Thalès.* Recueil annuel des travaux de l'Institut d'Histoire des Sciences et des Techniques de l'Université de Paris. Première Année: 1934. Paris: Librairie Félix Alcan. 1935. Pp. xix + 184. Frs. 30.

P. Descoqs, S.J. *Praelectiones Theologiae Naturalis. Cours de Théodicée.* Tomus secundus. *De Dei Cognoscibilitate,* II. Paris: G. Beauchesne et Fils. 1935. Pp. 926. Frs: 112., francs: 122 fr.

R. Laun. *Recht und Sittlichkeit.* Berlin: J. Springer. 1935. Pp. 109. RM. 4.80.

F-J. von Rintelen. *Albert der Deutsche und wir.* Leipzig: Felix Meiner. 1935. Pp. 46. RM. 1.50.

E. Lewalter. *Spanisch-Jesuitische und Deutsch-Lutherische Metaphysik des 17 Jahrhunderts.* Hamburg: Ibero-Amerikanisches Institut. 1935. Pp. 85.

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PHILOSOPHY

NEUVIÈME CONGRÈS INTERNATIONAL DE PHILOSOPHIE PARIS, 1937

Président d'honneur : M. Henri Bergson, de l'Académie Française

Comité d'organisation.—*Président :* M. Émile Bréhier, Professeur à la Sorbonne, 40, rue de l'Yvette, Paris XVIe; *Secrétaire :* M. Raymond Bayer, Docteur es-lettres, Agrégé de Philosophie, 26, Avenue Théophile-Gautier, Paris XVIe.

Paris,
le 1er juin, 1935.

Le Comité permanent du Congrès réuni à Prague en 1934 a décidé que le prochain Congrès international de philosophie aurait lieu à Paris en 1937; M. Henri Bergson en a été nommé président d'honneur; et la Société française de Philosophie a été chargée de l'organiser. La Société en a dès maintenant fixé la date: du 1er au 6 août 1937.

Si le Comité permanent a décidé d'abaisser d'une année l'intervalle de quatre ans qui sépare habituellement les congrès, c'est qu'il a voulu que le Congrès de 1937 fût une célébration du troisième centenaire du *Discours de la Méthode* et une occasion de réfléchir, selon l'impulsion donnée par Descartes, à ce qui fait l'essence et l'unité d'inspiration de la philosophie moderne.

Le programme du Congrès était tracé par le vœu même du Comité permanent; partant de l'image cartésienne de l' "arbre" de la philosophie, le Comité français d'organisation a pensé que l'unité de la méthode dans les diverses activités spirituelles devait être le problème fondamental posé devant le Congrès; il a considéré que ce problème, qui était celui de Descartes, restait au centre de nos préoccupations actuelles; car il revient à se demander quelle est la nature et quelle est la valeur de la raison; or la méthode n'est que la raison même en exercice. Le Comité a cherché les thèmes qui donneraient l'occasion d'examiner ce problème sous un aspect concret et vivant, et il propose les suivants:

1. L'état actuel des études cartésiennes.
2. L'unité de la science: la Méthode et les méthodes. Histoire du problème dans l'Antiquité, le Moyen-Age, les temps modernes.
3. Logique et mathématique.
4. Causalité et déterminisme en physique et en biologie. Probabilité et statistique.
5. Les rapports de l'âme et du corps.
6. Analyse réflexive et transcendance.
7. La valeur, les normes (morales, sociales et esthétiques) et la réalité.

C'est sur ce programme que le Comité d'organisation invite dès maintenant les philosophes et les sociétés de philosophie à porter leur attention. Au moment voulu, il leur sera adressé, avec le programme définitif, une invitation indiquant les conditions dans lesquelles seront reçues les communications, ainsi que le détail de l'organisation du Congrès. Dès maintenant, pourtant, le Comité accueillera avec plaisir les titres des communications qui pourraient lui être envoyés. Conformément à l'usage, les langues admises au Congrès seront l'allemand, l'anglais, le français et l'italien.

Pour le Comité d'organisation,
Émile Bréhier.

on est prié d'adresser les avis et les suggestions à M. Émile Bréhier, professeur à la Sorbonne, 40 rue de l'Yvette, Paris XVIe.

CORRESPONDENCE

To the Editor of *Philosophy*

My dear Editor,

It is with the greatest interest, but also with some surprise, that I have read Professor Campbell's article on *Reason and the Problem of Suffering*, published in your April number. The point which Professor Campbell emphasizes is the apparent negation of justice involved in unmerited suffering. A man deserves, or merits, to suffer only for his bad will and deeds (apart from any disciplinary value which the suffering may have). And it is this which Professor Campbell calls justice.[1] We might, however, take another view of the qualifications for suffering: Instead of conceiving the universe as a place for the apportionment of praise and blame we might think of it as the birth-place of whatsoever things are good.

If we do this, we find that our conception of justice and merit change, and we come to the conclusion that he merits to suffer who can do something with his suffering. Our sense of justice now demands that he who can incorporate the value given in a whole situation, and turn suffering and despair, fear and hatred into joy and trust and love, should be granted the opportunity to do so. The difference between the lower and higher levels of values is surely that the higher level includes suffering, ugliness, and error, while the lower one does not—we may compare the innocent happiness of the child with the happiness of Christ on the Cross. It seems only reasonable that the strong and the wise should suffer for the weak and the foolish, and not be kept in a state of placid contentment, in a world empty of real happiness, wide-eyed endurance, and supreme love.

If we accept this view, I think we may even go further and say that there is some proportion between merit and actual suffering. A dog, we know, suffers in a different way from a man, and men differ in the doglikeness of their suffering. We cannot measure the suffering of a dog, but we can measure and compare the suffering of our own lesser and better moments. When we accept suffering patiently and unthinkingly, we suffer dumbly like the dog; mental anguish is excluded, but so is also the wider reference. The suffering will run its own course, becoming relieved partly through finding physical expressions, and partly through our nature adapting itself to the new conditions (madness, even death, we must remember are forms of adaptation).

If we suffer in the above way, we may retain our trust in the goodness of God, but we do so in spite of our suffering; and have we not then failed to find the higher values? These seem to be discovered only by him who enters fully into the suffering, who recognizes it as evil, and by recognizing it as such prepares the path for its assumption into a larger whole. True, recognition involves more pain than acceptance; but it is also the symptom of the strength which can go through the suffering and overcome it.

Whenever we see suffering thus overcome our judgment of God's justice and omnipotence change.

If souls of a finer fibre *do* find the world endurable: if they do preserve through all an imperishable faith in the Perfection of the Supreme Being upon whom all things depend: then it can only be, surely, because this Supreme Being, as He is made known to them through religious experience, is felt so to transcend our finite comprehension that any attempt on our part to grasp and pass judgment upon His universe is repudiated as palpably absurd; if not indeed, as bordering upon the impious.

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[1] See especially the following sentence: "No one, I imagine, experiences any difficulty in reconciling with God's Perfection the existence of suffering that is *deserved*, and is roughly proportionate to desert. This, we should say, is but justice: and justice is a virtue. It is the existence of so much apparently *unmerited* suffering that engenders our doubts. "How can a just God let such things be?" we ask, confronted by some peculiarly heart-breaking spectacle of this kind.

I should have thought that our comprehension was widened, that at last we understood a little better what is meant by divine strength and omnipotence; that, in fact, our trust in God was no longer based on blind faith, but on sight and reason meeting each other, and saying, "God in us can overcome this suffering and evil; therefore He can also overcome this and this and this."

The problem of suffering should not be minimized. But that problem, as I see it, is caused not by unmerited suffering, but by wasted suffering: The agony of the child who does not know how to handle its pain and sorrow, whose mental anguish is far in advance of the resources available to it at the moment; the rabbit which is caught in a trap; the waste of those who break under their sufferings, and who might have lived happy and useful lives in lesser conditions. All these constitute problems which we cannot as yet solve; we may summarize them by saying that we do not know whether God can overcome the suffering in which He is not present.

GRETHE HJORT.

GIRTON COLLEGE,
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